

Hans Jonsson

The Laryngeal Theory

A Critical Survey



□ SKRIFTER UTGIVNA AV VETENSKAPS-
SOCIETETEN I LUND □ PUBLICATIONS OF
THE NEW SOCIETY OF LETTERS AT LUND

CWK GLEERUP

74

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PUBLICATIONS OF THE NEW SOCIETY OF LETTERS AT LUND 74

CWK GLEERUP LUND

*Published with the aid of grants from Humanistisk—samhällsvetenskapliga
forskningsrådet.*

CWK Gleerup är produktlinjenamnet för vetenskapliga skrifter
utgivna av LiberLäromedel i Lund.

ISBN 91-40-04673-7

Bloms Boktryckeri AB, Lund 1978

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After this book had gone to the press a further grant-in-aid for the printing was generously provided by the Carl-Bertel Nathhorst Research Foundation. It is a pleasure for me to acknowledge my thanks.

Hans Jonsson

Preface

The so-called laryngeal theory is almost 100 years old.

It can roughly be described as an attempt to put the PIE ablaut \bar{V} (that is \bar{e} , \bar{a} , \bar{o}) : \bar{a} on a level with the ablaut eu : u , ei : i , er : r , el : l , em : m , en : n with the help of "laryngeals" (often symbolized H).

Thus the laryngealists change \bar{V} : \bar{a} to eH ($\rightarrow \bar{V}$) : H ($\rightarrow \bar{a}$). And, according to them, the vowel colour of a , \bar{a} (and non-apophonic o , \bar{o}) is effected by a special kind (or special kinds, respectively) of contiguous H .

The laryngeal theory deals with very central things in PIE phonology. Its importance is increased by the fact that its very core opens many possibilities for explaining other things in IE or IE dialects through H . Indo-europeanists and sanskritists etc. have also made use of such possibilities to a great extent.

But the laryngeal theory is not universally accepted. As a matter of fact there is a very unsatisfactory situation in this respect. Many indo-europeanists and sanskritists etc. apply or develop or revise the theory on the basis of the conviction that its core is not open to doubt. On the other hand there are many who use the traditional (that is non-laryngealistic) way of reasoning without telling us whether they do so after a fair critical judgment of the laryngeal theory or only for convenience. Probably the latter is the rule. In any case only few linguists have definitely dismissed the theory and, in my view, none of them has correctly understood the basic principles or the crucial points of the theory.

I have used a lot of time, first to make myself familiar with the laryngeal theory, then to try to answer the legitimate question: Is the laryngeal theory proved or at least probable enough to be used? This has implied both dealing with the argumentation of the laryngealists in real earnest and giving the traditional units the chance that they deserve.

VIII

I feel it is a shortcoming that I have only a second-hand knowledge, from handbooks, of most IE dialects. Chiefly I regret that I am not a sanskritist or hittitologist in the strict sense of these words. For this reason my work ought to be characterized in this way: an attempt, based in the main on handbooks and other relevant linguistic literature, at an unbiased matching of the laryngeal theory with the traditional view.

After this characterization of the book in rough outlines I will end the preface by expressing my thanks to those who have helped me in my undertaking.

It has been of great importance to me that Professor Gösta Liebert, Gothenburg, was willing to look through the manuscript. He gave me an encouraging judgment but also pointed out some miswritings etc. in the presented material.

My friend Professor Gösta Holm, Lund, has been kind enough to read my manuscript.

Ph. D. Ingrid Petersson, Lund, has translated the work into English. I want to thank her for her invaluable help.

Ulrik Eriksson and Lars Svensson, my friends and colleagues at the editorial staff of Svenska Akademiens Ordbok (Lund), have devoted a lot of time to proof-reading.

My thanks to those who have made a fair copy of different parts of the manuscript: Mrs Ann-Mari Gayle, Lund, Miss Greta Hansson, Malmö, and Mrs Ingrid Möller, Lund.

This book could not have been finished if the Swedish Academy had not granted me a leave of absence for eight months with a full salary.

1. Historical outline

1.1 Saussure's theory of "les coefficients sonantiques" *A*, *Q*

In Saussure 1879 (see chiefly p. 135) the thoughts that constitute the basis of the so-called laryngeal theory are found:

(a) The basic vowel of the vowel system of the PIE was *e*. Under certain known conditions *e* was ejected (quantitative ablaut), under other (unknown) conditions it alternated with *o* (qualitative ablaut). — This apophonic *o* will in the following be referred to as *o*¹, when there is reason to distinguish it from the *o*² that will be mentioned presently.

(b) In addition to the *e/o*¹ : *Ø*-system there is a PIE *a* and a "fundamental" *o* (*o*²). *a* (e.g. in Lat. *agere*, Gr. ἄγω) and *o*² (e.g. in Lat. *olēre*, Gr. ὄζω) do not alternate with *e* and are not subjected to ejection.

(c) In the same places in the system as *e* the so-called fundamental long vowels *ā*, *ē*, *ō* (e.g. *st(h)ā-* in Gr. ἵστημι, Lat. *stātor*, *dhē-* in Gr. τίθημι, Lat. *fēci*, *dō-* in Gr. δίδωμι, Lat. *donum*) are found. Where the basic vowel *e* appears as the apophonic variant *o*, *ā* and *ē* are exchanged for *ō*, though not with the same regularity. Again in those cases when *e* would have been ejected, there is a reduction product of *Ṽ* (i.e. *ā*, *ē*, *ō*), which either appears as *ə*, or as *a* or *o*². The alternation *Ṽ* : *ə* etc. is considered by Saussure to be analogous to the apophonic alternation *eu* : *u*, *ei* : *i*, *er* : *r*, *el* : *l*, *en* : *n*, *em* : *m*.

Ṽ is a contraction product of *e* and *A* or *Q*, two new members of the group of "coefficients sonantiques" (see further point e below) which besides *A* and *Q* includes *i*, *u*, *r*, *l*, *m*, *n*. *eA* has given *ā* as well as *ē*. From *eQ* a non apophonic *ō* has arisen.

(d) The traditional vowel *ə* (→ Indo-Iranian *i*, Gr. α, ε, ο, for the rest *a*) = *coalesced* ^A and ^Q, i.e. reduction products of *A*, *Q* ("une espèce d'é muet, provenant de l'alteration de phonèmes

A et Q") in certain positions where *e* would have been ejected. The development $\overset{A}{A}, \overset{Q}{Q} \rightarrow \text{ə}$ is the rule in final position but also occurs in medial position in competition with *a*, *o*². The zero grades of *eA* and *eQ* have the historical manifestations *a*, *o* throughout in initial position.

However it is only in a few cases that Saussure considers himself to have found instances of apophonic alternation \bar{a} or $\bar{e} : a$ (and no case of $\bar{o} : o$), for which reason he is generally compelled to see an isolated zero grade behind *a* and *o*².

(e) *A* and *Q* are structurally or functionally derived and "algebraically" decided entities. (It is only in the explanation of "*eA*, *eQ* : ə" that Saussure touches upon phonetics; see d). Like *i*, *u* and *r*, *l*, *m*, *n* they are "coefficients sonantiques" whose double function is to be combined with *e* as "une seconde sonante" (135) and to be an independent syllabic at the ejection of *e*. — With regard to the fact that Saussure sees *A*, *Q* only in the full grade *eA*, *eQ* or in the zero stage, and then only as vocalic reflexes (*a*, *o*, *ə*), it is most natural to ascribe a basically vocalic character to the entities of Saussure. Saussure seems to be uninterested in the question of the phonetic character of these phenomena, but his assertion that ə is "une dégénération de voyelles *A* et *Q*" may to a certain extent be taken as a declaration of his standpoint.¹

(f) Through the application of his theory concerning *A*, *Q* to the so-called set-roots Saussure arrives at, inter alia, the following:

(α) CR^A (see d) $\rightarrow C\bar{R}$ (from \bar{R} , before *C*, the historical manifestations \bar{i} , \bar{u} and the complex reflex of \bar{i} , \bar{l} , \bar{m} , \bar{n} (see 3.2.2.9), before *V* again, via $\bar{R}\bar{R}$, the historical reflexes also presented in 3.2.2.9).

(β) The present formant $n\bar{a}$ in the Skt 9th verb class originates in *neA*. Thus *punāmi* for example has the pre-form *pu-ne-A-mi*, which is related to the full grade form of the root *peṅ*^A- (e.g. in Skt *pavītár*-) in the same way as for example *bhinādmī* in the 7th verb class is related to the root *bheid*- (e.g. in Skt *bhédāmi*, Goth. *beitan*). An infix *ne* occurs in both cases before the final sound of the root.

Much later (1892), and then, there is reason to think, as an adherent to the consonantal theory (of this see 1.2), Saussure

¹ When Saussure's *A* and *Q* are called consonants or consonantal elements, as in Sweet 1880: 160, we have to do with an anachronism or a misinterpretation under the influence of the later consonantal theory (see 1.2).

again discusses the subject when he explains certain cases of voiceless aspirates (in Indo-Iranian) as emanating from a stop + A (and Q) before vowels.

1.2 Saussure's theory before Anatolian h was introduced

Half a century was to pass before Saussure's theory began to be of noticeable consequence for comparative IE linguistics. It was probably rescued from disregard and oblivion by the fact that, after it had been interpreted or remodelled into a consonantal theory, it was considered to be given historical confirmation in Anatolian h (see 2.).

However, Saussure's construction was not as a pure theory entirely without acceptance. In this connection there is on the one hand the adherence to Saussure in principle found in Meillet 1903: 129 f., which has the following import: the relation between \bar{V} and \bar{a} seems to be analogous to that between *ei*, *eu*, *er* etc., and *i*, *u*, *r*, etc.; on the other hand there is an interpretation or remodelling of the theory of Saussure into a consonantal theory.

It is in this latter form that Saussure's hypothesis has been considered to be confirmed by the accepted historical proof of Anatolian h.

The consonantal theory was created by the Dane H. Möller, inspired by facts in Semitic languages, and it was later to constitute an important part in the hypothesis concerning a Sem.-IE relationship put forth by Möller and certain other scholars (see especially Möller 1880¹, 1880², 1893, 1906, 1917). Further adherents of the consonantal theory were, in the first place, the Dane H. Pedersen, who was chiefly interested in proof that PIE \bar{a} emanates from a consonant (see chiefly Pedersen 1907, 1909, 1926), albeit he believed, to begin with at least, in the Sem.-IE hypothesis, and the Frenchman A. Cuny, who was the most advanced of the adherents of the "Nostratic" theory, but who has also offered what probably all laryngealists have since then considered to be the most important support for "consonantal \bar{a} " (see especially Cuny 1912 and his last work, 1946).

In the consonantal theory "before h" the A, Q of Saussure are exchanged for three (originally) solely *consonantal* phonemes

E , A , O (or H^1 , H^2 , H^3 or ∂^1 , ∂^2 , ∂^3) or for two — as O (H^3 , ∂^3) is considered to be unwarranted — E , A . Its basic import may be set forth in the following concentrated and compressed way:

(a) \bar{e} , \bar{a} , \bar{o} , $< eE$, eA , eO respectively — O being discarded and the \bar{o} in question conceived as an isolated apophonic \bar{o} — \bar{e} , \bar{a} $< eE$, eA .

(b) eH in the zero grade gave on the one hand the consonant H , which dropped out or was transformed into an aspirate, on the other hand “ ∂ ”.

(c) “ ∂ ” $< H$ (cf. i , u , r , l , m , n) or $< \bar{v}$ (“schwa secundum”) in contact with H . — “ ∂ ” here = what has traditionally been meant by this sign (i.e. the PIE equivalent to Indo-Iranian i : Gr. α , ϵ , o , in remaining *IE dialects* a) or = traditional ∂ plus a à la Saussure. The latter view is held by Pedersen with some hesitation, and by Möller, in an early stage of his authorship and as an alternative to the traditional view.

(d) a (interpreted as something other than ∂) and o^2 (in so far as this PIE entity is accepted) $< Ae$, Oe . — Every root with V - (probably) $< He$ -.

(e) As arguments for “the consonantal ∂ ” the following has been pointed out:

(α) Alternation ∂ : \emptyset (Pedersen, Cuny).

(β) The 9th and 7th verb classes in Skt become entirely parallel (Cuny).

(γ) The development of the zero stage of the set-roots: $CR\partial-C- \rightarrow CR\partial-C- \rightarrow C\bar{R}-C-$ and $CR\partial-V \rightarrow CR\partial-V- \rightarrow C\bar{R}-V-$ can only be understood if ∂ is seen as being in a consonantal state in these positions. How should otherwise $R \rightarrow \bar{R}$ be explained? (Cuny).

(δ) Through H all roots may be given the same original structure (or in any case a way is indicated in which this standpoint may be reached): $VC-$, $VR-$ $< HeC-$, $HeR-$; $C\bar{V}-$, $R\bar{V}-$ $< CeH-$, $ReH-$. Further (according to Cuny) $m\bar{e}-$ ‘measure’ (Skt. *māti*, Lat. *mētor*) $< meE-$ in analogy with the synonymous *med-* (Goth. *mitan*, Lat. *meditor*) and $\bar{u}\bar{a}-$ ‘weave’ (Skt *vāna-* ‘weaving’) $< \bar{u}eA-$ equivalent with $\bar{u}ebh-$ (OHG *weban* ‘weave, plait’).

(ε) An alternation $H(> \emptyset)$: \bar{H} ($\rightarrow \partial \rightarrow \bar{i}$), in the zero grade of eH , is traceable in Skt paradigms (Pedersen 1893: 269) : *kriṇāmi* ($-nā-$ $< -neH-$) vis-à-vis *kriṇīmāḥ* (with $\bar{H} \rightarrow \partial$) : *kriṇānti* (with H that dropped out before vowels); nom. sing. *pánthāḥ*, acc.

pánthām vis-à-vis *pathi* in weak cases before endings with consonants (*pathíbhyah*) and *path-* in weak cases before endings with vowels (gen.sing. *patháh*). Observe that Pedersen has here not yet seen any connection between *H* and the aspirate (cf. 1.3.1.1 Kuryłowics). —And the *seṭ*-roots become=*aniṭ*-roots+the suffix (*e*)*H*. This is now in Cuny combined with an “anticipation” of the root theory of Benveniste (see 1.3.1.3).

(f) The phonetic content given to *H* is contained within the schematic framework: laryngeal and/or pharyngeal or velar spirant (cf. Sem.). Cf. the name “*the laryngeal theory*”. — As for the Sem. consonants in question, Proto-Semitic according to Moscati 1964: 41 had two pharyngeal spirants : voiceless *ħ* and voiced *ʕ*, two laryngals: the stop *ʔ* and the voiceless spirant *h*, and two velar spirants: voiceless *ħ* [x], and voiced *g* [ɣ]. Classical Arabic has retained the original consonant system intact on these points. When Möller (see below) for example speaks of Sem. *laryngals*, the notation applies to both Moscati’s *laryngals* and his *pharyngals*. The Sem. laryngals and pharyngals, chiefly *h*, *ʕ*, have to a varying degree (above all in Arabic) promoted the occurrence of the *a*-vowel, partly by causing transformation into *a*, partly by preserving *a* from transformation into open *e* and the like. Cf. 1.3.1.12.

1.3 The modern laryngeal theory (with Anatolian h as its main support)

When Kuryłowicz (and Cuny) in 1927 combined Hitt. *h* with PIE *A* the modern laryngeal theory was born. The consonantal theory of Möller (Pedersen and Cuny) — which, again, was an interpretation or remodelling of Saussure’s theory of “coefficients sonantiques *A*, *Q*” — thereby received a new cardinal support, an assumed direct historical confirmation.

With this new support the laryngeal theory acquired a great number of adherents and a large quantity of linguistic material was put in relation to it. Indo-Europeanists, or any linguists for whom the theory carried relevancy, may roughly be divided into the following categories: (1) adherents, (2) opponents, (3) those who do not wish to or do not consider themselves able to form an opinion on the subject and proceed as if the theory did not exist. The historical outline given below first treats the adherents

of the theory, and their various constructions of it, and will then briefly attend to those who deny or ignore the theory.

With regard to the extent to which the modern laryngealists have accepted the ideas of Saussure/Möller or the scope and consistency given to these ideas I will distinguish between the “full laryngeal theory” and the “reduced laryngeal theory”. As opposed to the full laryngeal theory the latter does not accept (or only partly accepts) that the core of the theory — $\bar{V} < eH$, $\partial < H$, the vowel colour of \bar{a} , a (and o^2) through H — gives rise to new phonemes and causes the traditional PIE vowel system to have the appearance that it has.

1.3.1 The full laryngeal theory

The foundation of the full modern laryngeal theory is the Anatolian h which is considered to confirm the consonantal theory inherited from Möller (Pedersen and Cuny). The theoretical core taken over by the modern laryngealists may on the whole be said to be the same as that presented for the early consonantal theory in 1.2 (see also 1.3.1.14.1). As in the consonantal theory “before h ” we find in its continuators the variations $\partial < H$ or $< v$ in contact with H and the accepting or denial of o^2 and of an o -colouring H .

Those who have published works about the full laryngeal theory are numerous, just as the variations within the mutual framework are many, and new arguments connected with different dialects for and/or applications of the theory are multifarious and have been presented in great numbers. I have chosen to base my historic outline on persons and to select the most important and/or most representative of the “full laryngealists”, according to my view. In the summary (1.3.1.14), however, the persons pass into the background. Therefore the summary is an indispensable complement to the main context of this part. The reader who wishes to take a short cut and swiftly make himself acquainted with the main features of the full laryngeal theory is referred directly to 1.3.1.14.

The introduction of the historic outline is — in spite of its size — by no means exhaustive. For complements to the outline I refer especially to *Evidence for laryngeals* (1965).

1.3.1.1 Kuryłowicz

The Pole J. Kuryłowicz is probably the most important name in the modern laryngeal theory. In 1927 he for the first time connected Hitt. *ḫ* to the *H* of the theory (Kuryłowicz, like Cuny, uses the sign *ə*). In a series of articles he then evolved his version of the laryngeal theory with the basic support mentioned, while studying, above all, (prosodic) phenomena in Vedic. In 1935 Kuryłowicz gives a synthesis of what he has earlier said and thought on the subject.

Kuryłowicz finds correspondence only between *ḫ* : *A*, but on this point as early as 1927 he presented most of the now well-known examples which have been met with in literature on the subject ever since: *ḫanti* (:Lat. *ante*), *ḫarki-* (:Lat. *argentum*), *paḫš-* (:Lat. *pāscere*), *neḫaḫḫ-* (:Lat. *novāre*), *paḫḫur* (got. *fon*) etc.

Concerning Kuryłowicz' version of the laryngeal theory in other respects, see points 1—5 below (to which, of course, the basis common to all full laryngeal theory is to be added, see 13.1.14.1).

(1) PIE has had four *H*'s. Only in an inconspicuous passage (1935:27, note 2) do we find that Kuryłowicz considers *H* to be laryngal or pharyngal. He is uninterested in the phonetic content of *H*, and, like Saussure, he has an "algebraic" attitude. Kuryłowicz goes no further than to point out certain phonological components of *H*:

"Laryngeals"	<i>H</i> 1	<i>H</i> 2	<i>H</i> 3	<i>H</i> 4
(a) vowel colouring: not vowel colouring	—	+ : <i>a</i> -colouring	+ : <i>o</i> -colouring	+ : <i>a</i> -colouring
(b) voiced: voiceless	—	— (?)	+	— (?)
(c) aspirating: not aspirating	—	—	—	+

As regards support for distinctions b and c, see points 5 b, c below.

(2) Regarding the origin of *ə* Kuryłowicz has changed his mind several times. I will only mention that in 1935 he derives *ə* < *Hv*, the reduced grade of *He*, whereby the Gr. triad *α, ε, ο* reflects *A, E, O* respectively. The zero grade of *eH* before consonants, on the other hand, is, except in Gr. (and Arm.), in a medial syllable *Ø*

(cf. Skt *dadmāh*, *dadváh*), in an initial syllable $\bar{V} < \textcircled{v}H$ (cf. Iranian *dāta-*, *stāta-*, *dāti-*, *stāti-*, Lith. *dúotas*, *dé'tas*, *stótas*, *dúoti*, *dé'ti*, *stódi*, Goth. *dēps*, OHG *tāt*, ON *stód*; to the roots *dō-*, *dhē-*, *sthā-*).

This reasoning involves the necessity to start out from a state II (with the application of Benveniste's root theory), *dOe-*, *dhEe-*, *stAe-*, for the zero grade reflexes Skt. (**ditá-*) *hitá-* *sthitá-*, Gr. *δοτός*, *θετός*, *στατός* and Lat. *datum*, *factus*, *status*.

(3) He accepts the view (first put forth by Cuny) that *HC-* or (especially) *HR-* (after words ending in *C*) has given Gr. and Arm. prothesis. According to the 1935 version the prothetic vowel has arisen from *HR-*, *HC-* by a non-phonemic vocalic segment being formed after *H*.

(4) Through application of point (3) and Benveniste's root theory (see 1.3.1.3) alternations such as Gr. *ἄλεγω* : *ἄλγος* are traced back to *Aleg-* (state II) : *Aelg-* (state I), and *ἄεξω* : *αὔξω* to *Aęeks-* : *Aeuks-*.

(5) However, it is above all in Indo-Iranian, especially in Vedic, that Kuryłowicz finds traces of *H* (some of which constitute support for the phonological components (b) and (c) in *H* mentioned in point (1)).

(a) An example from a dialect of *VHC-* → $\bar{V}C-$ is, according to Kuryłowicz, found in the compositional lengthening in Skt, e.g. *āsat* (< *a* + *Espt*, to the zero grade of *es-* 'be'), *anūrúdh-* (< *anu* + *Eludh-*, i.e. the zero grade of *leudh-* 'sprout'), *sūnára-* and *abhī naraḥ* (< *su*, *abhi* and *Anoro-*, cf. Gr. *ἀνίρ* with a prothetic vowel). Another special case of *VHC* → $\bar{V}C$ is found in the so-called Attic reduplication in Gr., inter alia *ἐνήνοχα*, *ἐλήλουθα* < *EneEnok-* and *EleEloudh-* (with *eE* → \bar{e} and initial *E* → the prothetic vowel *ε*), to the roots *leudh-* and "*enek-* . . . reichen . . ." (P 316 ff.), while the types *ὄλωλα* (pres. *ὄλλυμι*; to a root *olə-*) and *ὄπωπα* (to *ok^u-* 'see, eye') are analogical (cf. 1.3.1.11).

(b) As Saussure and Cuny, Kuryłowicz assumes that a voiceless or voiced stop followed by a pre-vocalic *A* (H^4 , possibly also H^2) has given (or could have given) voiceless or voiced aspirates in Indo-Iranian.

As regards voiceless aspirates it should first be mentioned that Kuryłowicz cites Saussures' examples *pṛthivī*, *tīṣṭhāti*, *ásthāt*,

sthítā- and asserts that the aspirate follows the rule even in the case mentioned last, as *H* has there been placed before schwa secundum (i.e. *th* < *-tAə-*). Further he finds reason to hold that *th* comes from *tA* in the verb stems *math-*, *grath-*, *śrath-*, which have a *nā*-present. And Kuryłowicz is probably the first to see the inflection of Avest. *pantā*, with *t* in the nom. and other strong cases: *θ* in the gen. *paθō* and other weak cases, as a regular alternation (*-tVA-* vis-à-vis *tAV-*); in the corresponding Skt *pánthāḥ*, with *th* throughout in the inflection, the consonantal variant of the pre-vocalic zero grade has been normalized (cf. Pedersen; see 1.2). Finally Kuryłowicz sees one and the same original suffix in the adverb-forming suffix *-thā*, the denominative abstract-forming suffix *-tā*, the verbal noun-forming suffix *-atha-* and the superlative-forming suffix *-iṣṭha-*, whereby *t* or *th* throughout is assumed to emanate from an alternation between *-teA* and a thematization thereof, *-tAe-*. — It was the emergence of *th*, *ph*, *kh* from *t*, *p*, *k* + *A* that created a distinctive opposition between voiceless and voiced aspirates in Skt. Phonemically voiced *dh*, *bh*, *gh* have never existed in any other IE dialects or in PIE.

(c) The main argument for the supposition “*H*³ is voiced” (“*H*¹, *H*², *H*⁴ on the other hand voiceless”): Skt *píbatī* to the root *pō-* ‘drink’, where *p* → *b* is explained by the fact that the voiceless stop is followed by a voiced *H*³ in the thematized *pi-pH³e-ti*.

(d) *H* dropped out between vowels which were later contracted. But traces of the lost *H* are found in certain occurrences of hiatus in Vedic: inter alia in the trisyllabic pronunciation of the imperatives *pāntu*, *yāntu* (derived from *peH-ent-u*, *yeH-ent-u*) and in *déṣṭha-* (the superlative of the root *dō-*) and in the disyllabic pronunciation, *-paam* (*peHṇ*), *-paā* (*peHeH*), *-paas* (*peH-es*) in the acc. sing. and the nom.-acc. dual. and the nom. acc. pl. respectively of the root noun *-pā-* in *gopāḥ* ‘shepherd’ (to *pā-* ‘protect’) and in *bhāḥ* n. ‘light’ (*bheHe/os*; cf. the type *tāpaḥ*, *mānaḥ*, Gr. γένος, Lat. *genus*).

(e) Some of the exceptions to a revised version of “Brugmann’s law” (PIE *o* → Indo-Iranian *ā* before *R* in an open syllable) may be explained by *H*: 1st p. sing. *cakāra* (vis-à-vis 3rd p. sing. *cakāra*) originates in PIE *kekorHe* with *o* thus in a closed syllable (as compared to PIE 3rd p. sing. *kekore*). And in the same way the absence of lengthening in a causative such as *janáyati* (to

ġenə-) vis-à-vis *pātáyati* 'let fly or fall' (to *pet-*) is to be understood.

(f) Kuryłowicz has the working hypothesis: all roots with initial *V*- < *He*-. But he clearly says that this is an assumption-for-the-time-being, since he only in certain cases finds proof that an initial vowel was preceded by *H*. Mutatis mutandis Kuryłowicz assumes the same attitude regarding $\bar{V} < eH$.

Except for 5e (found in the work of 1927 but not in that of 1935) the points 1—5 hold for the work of 1935 (and for earlier work or works). It is in this earlier period of his authorship that Kuryłowicz appears as the founder of the modern laryngeal theory by connecting *H* and Hitt. *h* and drawing attention to a number of arguments, launched by others or by himself, for consonantal *H* being partly retained in the dialects.

In 1961 he has abandoned much of what he had earlier believed in, and he sets forth a reduced laryngeal theory (see 1.3.2.1). In the interim (1956) it may be observed that, seen with the eyes of "orthodox" laryngealists, he had begun to complicate his original construction, among other things by the assumption that "PIE *a*" had never existed except in "les langues du sud" (Gr., Arm., Lat., Celt.) where it had arisen from an especial allophone of syncreticized *e* and *o*¹ in contact with *A* and also by not altogether rejecting the idea of compositional lengthening in Skt (see point 4a), but on the whole giving to the phenomenon a morphological-phonetic explanation without any use of *H*.

1.3.1.2 Pedersen and Hendriksen

The Dane H. Pedersen was one of the few, if not the only one, who accepted Möller's consonantal theory (in its original version) and offered supposed proof of that theory without making use of it in "Nostratic" speculation (cf. 1.2). To him Hitt. *h* has confirmed the pure construction which he had earlier considered worth basing his reasoning on.

The most important work is that of 1938 whose chief aim is to inquire into the question whether Hitt. is an IE dialect, as the majority of scholars hold, or whether it is a sister language of PIE (in which case the relation between Hitt. and the IE dialects will be analogous to that between for example Gr. and the different Germanic languages), as some others (chiefly Sturtevant)

hold. He arrives at the conclusion that Hitt. is an IE dialect. And as a result of this standpoint, among other things, he declares, in agreement with his earlier view: "der Laryngal ist also in jedem Sprachzweig für sich geschwunden" (179). As before, Pedersen denies the need of an *o*-colouring *H* (*O*). The remaining necessary *E*'s and *A*'s have met with the following fate in Hitt.: "diphthongal" *eE*, *eA* before consonants → *ē*, *ā*; initial and medial *H* is retained; *H* → *a*. Besides this Pedersen thinks it possible that Hitt. *h* in certain cases reflects *kj* and *gj*. — For the rest it should be mentioned that Pedersen (a) now, even if he does so with some hesitation, considers the PIE phonemes *ə* and *a* to be partly separate in Indo-Iranian, (b) of Kuryłowicz' Indo-Iranian arguments accepts at least aspiration and hiatus as caused by *H*, (c) in 1945 makes it clear that Lycian is closely related to Hitt., and that there is a relationship between Lycian *χ* (inter alia in the pret. sing. l. -*χα*) and Hitt. *h* (inter alia in the pret. sing l. — *hun*).

Another Danish laryngealist, H. Hendriksen, agrees (1941) with Pedersen in so far as he (albeit with some hesitation) contents himself with two *H*'s (*E*, *A*) and, in principle, sees the same relation between *H* and *h*: in some cases *h* originates in *kj* or *gj* medially, but in the main it reflects *E* and *A* whose double equivalents, in Hitt., *h* and *Ø*, are explained by development being different in different positions and by analogical disturbing of the regular development. Of Hendriksen (1941) should further be said that he: (a) (unlike the earlier Pedersen) gives reasons for *ə* and *a* really being different phonemes in PIE: *a* never corresponds to *i* in Indo-Iranian and the development to Gr. *α*, *ε*, *ο* implies that *ə* is something different to and less stable than *a*; the same is the case concerning the dropping out of *ə* medially in Gmc and in Balto-Slavic (where he sees a lost vowel *ə*, not a lost *H*), (b) assumes concerning the development of *H* between consonants: *H* → *h* between stops, but that it remained at first between other consonants, only to drop out analogically later in that position, (c) gives, by way of introduction, a readable and clear survey of the main points of the laryngeal theory, its supposed proof and advantages over the traditional view; concerning this latter point it should further be noted that besides Cuny's arguments for consonantal *H* he especially draws attention to the Skt alternation of the type nom. *dhīh*, *bhūh*: gen. and abl. *dhiyáh*, *bhuváh* (after Kuryłowicz) and the non-contraction of *ə* and the thematic vowel

in cases like Skt *tī-sṭhati* (< *tī-stā-e-*) and Gr. *πέτομαι* (< *petā-o-*), the last being an observation of his own.

1.3.1.3 Benveniste

As a laryngealist Benveniste (1935:148 ff.) declares himself to follow Kuryłowicz (without therefore accepting all that the latter has to say on the subject). Benveniste deserves a heading of his own in this historical outline because of what it has meant for the laryngeal theory that he assigns a place to it in his structurally brilliant PIE root theory which found many followers.¹ The theses of Benveniste are the following (1935:150 ff.):

- (1) The root has always been *CeC-* (or *CeR-* or *ReC-*).
- (2) Every root may have one (or several) *eC : C* (or *eR : R*)-ab-lauting suffixes. Apart from suffixes the root may also have one consonantal enlargement.
- (3) When a root and a suffix are combined, either the root or the suffix, never both, contain the full grade vowel *e*. The combination of *CeC* (or *CeR* or *ReC*) and *-C-* (or *-R-*) he calls state I, the combination of *CC-* (or *CR-* or *RC-*) and *-eC* (or *-eR*) he calls state II. — Thus there are, for example, of the root *per-* and the suffix *eḱ*: I *per-ḱ-* (Lith. *peršù* 'propose on behalf of someone'), II *pr-eḱ-* (Lat. *precāri* 'pray'), of the root *der-* and the suffix *eu* there are: I *der-u/dor-u* (Skt *dāru* 'wood'), II *dr-eu-* (Goth. *triu* 'wood, stem'), and of the root *dei-* 'shine brightly' and the suffix *eu*: I *dei-u-* (Skt *deva-* 'god'), II *dī-eu-* (Skt *dyauh* 'heaven', Gr. *Ζεύς*).

When there is a combination of root, suffix and enlargement, it is always a case of a combination of state II and an enlargement, e.g. *per + ek + s-* (enlargement) → *prek-s-* (Skt *práks-* 'strengthen'). Exceptions from point (1): (a) roots of the pattern *VC-* (e.g. in Gr. *ἔδω, ἄγω, ὄζω*) and (b) *seṭ-*roots (with two full grade forms *CERə-* and *CRV-* or only the former full grade form) are explained by the help of the laryngeal theory. In (a) we have to do with an original *HEC-*, in (b) with roots with a suffix, e.g. *pelə-*: *plē-* 'fill, be full' < I *pel-E-*: II *pl-eE*.

When there are bases which seem to contain more than a root with one suffix and one enlargement, we actually have to do with noun formations. Observe in this connection that *n* in the verbs

¹ See for example Keiler 1970:70, to mention a recent laryngealist.

with a nasal infix according to Benveniste is to be characterized as an enlargement that is placed before the suffix. It is therefore only *n* that has been inserted into for example PIE *ḡnegti* (Skt *yunákti*) and *ḡlneuti* (Skt *vṛṇóti*), while *e* belongs to a suffix *ek* or *eu*. In the same way PIE *puneAti* (Skt *punáti*) is to be analysed *pu-n-eA-ti*.

Whenever a "root" of the type *CeCC-* or *CCeC-* is found, it is actually a case of a state I or a state II respectively. With this exceptionless point of view Benveniste considers it justified to make bold constructions in searching for pairs of state I and state II.

1.3.1.4 *Couvreur*

An imposing contribution to the discussion is Couvreur 1937.

The author describes the following as structural problems in PIE according to the traditional view:

(1) \bar{e} , \bar{a} , \bar{o} have a common reduced vowel, \bar{a} , but *e*, *a*, *o* are what we expect to find.

(2) The root type *CV-* does not exist, but *C \bar{V} -* and *CVC-* do. Therefore *C \bar{V} -* seems to be morphologically equivalent to *CVC-*.

(3) Roots with *e* are the rule, while radical *a* and *o*² are rare. Further *a* and *o*² play practically no part in morphology and ablaut *a:o* has not been verified. The whole of the root structure of PIE is dominated by the *e/o:Ø*-system.

After having thus accepted Saussure's main argument for the theory of "les coefficients sonantiques *A*, *Q*", Couvreur declares his acceptance of the consonantal theory. But Möller and others leave behind them, he says, the following unanswered questions:

(a) What is the fate of *o*¹ in contact with *A*? (b) How is the common \bar{a} in the weak ablaut grade of \bar{V} to be explained?

After having examined other explanations of Hitt. *ḫ* in IE words — i.e. secondary emergence of different kinds — Couvreur goes on to assume the same attitude as Kuryłowicz: *ḫ* is a reflex of those PIE consonants that on theoretical grounds should be assumed to be the origin of \bar{a} and to have contributed to the genesis of the so-called fundamental long vowel and \bar{a} . After having carefully, intelligently and, as I think, on the whole soundly, examined the Hitt. material, he arrives at the following

version of the full laryngeal theory and of the correspondence $H : h$ (whereby he also answers the questions (a) and (b) as given above) : PIE had an E , an A and an O (Couvreur uses the phonetically motivated symbols $^{\circ}$, h , $^{\circ}$).

o^1 , too, became a in contact with A .

The vocalization of H in non-Anatolian IE dialects occurs after A and O have coalesced with E which explains the uniform a that he thinks to have existed.

Concerning the correspondence between H and h Couvreur arrives at the following view:

- (a) PIE $Ae-$, $Oe-$: Hitt. $ha-$; PIE $Ee-$: Hitt. $e-$.
- (b) PIE eA : Hitt. ahh ; PIE eO : Hitt. ah ; PIE eE : Hitt. \bar{e} .
- (c) zero grade in Hitt. : of PIE eA : hh ; of PIE eO : $??$; of PIE eE : a or \emptyset .

Couvreur needs no second A (H^4).

With regard to the possible phonetic sphere of Hitt. h , the effect of the "laryngeals" and empirical experience of laryngals and pharyngals in Sem. languages (and also a possible relationship between PIE and Sem.) Couvreur considers the following to be equivalent:

- E to Sem. ʔ
- A to Sem. h
- O to Sem. ʕ

Finally it should be pointed out that Couvreur remarks that he and Kuryłowicz are of the same opinion concerning the phonetic character of O : voiced. But for the rest he has many objections against Kuryłowicz' view: a second A , H^4 , is unnecessary (as already mentioned), and he expresses doubt as to the assumptions about aspirates, compositional lengthening in Skt on account of H and prothetic vowels $< H$, in any case to the extent that Kuryłowicz thinks; nor does Couvreur believe in Skt *pībati* as proof that O is voiced.

1.3.1.5 Sapir — Sturtevant

Edgar H. Sturtevant is an important name in the history of the laryngeal theory. His version is based on ideas published by his

fellow-countryman E. Sapir. Sturtevant's importance rests on the fact that he tied Sapir's ideas together into a collected version of the theory which he then applied with great resoluteness and consistency.

From Sturtevant's most central work on the subject (1942) I consider the following to be the most important:

(1) Sturtevant accepts 4 *H*'s, whose notation, sound value, effect as to vowel colouring and relation to the four *H*'s of Kuryłowicz are the following:

Notation	Sound value	Vowel colouring	In Hitt. Corresponds to Kuryłowicz
ʰ	palatal laryngeal stop	non-vowel colouring	Ø <i>H</i> ¹ (ə ¹)
ʰ̣	velar laryngeal stop	α-colouring	Ø <i>H</i> ⁴ (ə ⁴)
χ	voiceless velar or postvelar spirant	α-colouring	ħ (<i>h</i>) <i>H</i> ² (ə ²)
ɣ	voiced velar or postvelar spirant	non-vowel colouring	ħ <i>H</i> ³ (ə ³)

Comments:

Sturtevant explains *o*² and primary *ō* as isolated apophonic *ō̃* and therefore has no need of an *o*-colouring *H*. Sturtevant's *γ* may be said to correspond to *H*³ (ə³) in Kuryłowicz, except for the *o*-colouring.

As for the arguments for the phonetic content that is ascribed to these *H*¹—*H*⁴ the following may be pointed out: That *H*³ is voiced and *H*² voiceless is by Sturtevant based on the opposition between the double and the single *ħ* that is met with medially (between vowels) in Hitt. with some consistency (cf. 2.3.2), and also on the facts mentioned under points (6), (7) and (10) below. Concerning the qualitative values given to *H*¹—*H*⁴ it is, among other things, the case that *H*², *H*³ are interpreted as velar spirants chiefly on account of Hitt. *ħ* (see 2.3.2), and to this is added the α-colouring effect of *H*²; *H*⁴ is velar to Sturtevant on account of its corresponding to *H*² concerning vowel-colouring.

It is of fundamental importance that Sturtevant derives PIE and Anatolian (with Hitt. as the historically most important member) as sister languages from "Indo-Hittite" (the abbreviation IH will be used below) and assumes that PIE only knew

reflexes or traces of *H* (i.e. vowel colouring and vowel lengthening and also the phenomena mentioned in points 3—9).

(2) All roots with initial *V*- probably < *He*-.

(3) *ə* < *ɐ* in contact with *H*. The alternation *ə* : *Ø* in PIE originates in the alternation *H*+*ɐ* : only *H* in IH.

Sturtevant draws attention to the following reflexes of *H* in PIE that are unusual and only found in certain IE dialects, some of which are taken from Kuryłowicz (see points 4—6, 10) or Sapir, others being observations of his own.

(4) Certain cases of *-V HC-* → *-V̄C-* (or *-V̄ C-*).

(a) The long augment in a case like Gr. ἤδῃ 'I knew', where it is on the whole a problem, and in cases like the pret. of 'be', Gr. ἦα etc., Skt *āsam* 'I was' etc., where, according to the traditional analysis, it should only be found in the sing. (< *e-e*).

(b) Lat. perf. *ēdi*, *ēmi*, (*co-*)*ēpi* < pl. *HeHd-*, *HeHm-*, *HeHp-*.

(c) To *me*, *se*, *ne* there are byforms with long vowels, which arise through the position of the words before words with initial *HC-*.

(5) Traces of a dropped out *H* between vowels in the shape of hiatus in *Vedic*.

(6) Certain aspirates in Indo-Iranian and Gr. < PIE *th* etc. (possibly two phonemes, however) < IH *t* etc. + *H*.

(a) Voiceless stop + voiceless *H* → PIE *th*, *ph*, *kh*, evidence of which is found only in certain Indo-Iranian aspirates and in a few Gr. aspirates.

(b) With a certain hesitation Sturtevant (like Kuryłowicz) mentions Cuny's examples of the voiced stop *g* + *H* (*H³*) → the aspirate *gh*, which he, according to his main principle (see point 1), traces back to PIE; he adds a word for 'hand', Skt *hasta-*, Avest. *zastō* (which he connects with Gr. ἀροστός 'palm').

(7) IH initially voiceless *H* + *R* → PIE *hR-*. — Traces of *hR* are seen above all in Gr. In this IE dialect *hi-* and *hɥ-* (< *H_i-*, *H_ɥ-*) have given *ῆ*, for example ὅς 'which' (: Skt *yah*; to be connected to Lat. *eum*, Skt *ayám*, whose initial vowel supports the reconstruction of initial *H_i-* for Gr. ὅς; cf. point 2 above), αἶνω 'throws corn' (< *Xwɐ* 'n-ye/o-', which is by Sturtevant equated with Hitt. *ḫuḫant-* 'wind'). Initially *i* has on the contrary given ζ (e.g. ζυγόν, Skt *yugám*), *ɥ*, again, *Ø* (e.g. οἶδα).

With regard to PIE *hr-*, *hl-*, *hm-*, *hn-* (< *Hr-* etc.) in Gr. Sturtevant gives ὀύζεω 'growls, snarls' as an example of *hr-*, νέφος

'cloud' with length by position in Homer (cf. Skt *ámbhaḥ* 'water') as examples of *hn-*, and declares himself to know of many examples with *λ-* that have length by position in Homer without any original *sl-* being the case (of which *λαπαρός* 'soft, limp', cf. *ἀλαπάζω* 'empties, drains', Skt *álpa-* 'small, weak', are given as the etymologically most certain ones).

This development of *hR* < *HR* is supposed to take place parallel to the development of *sR-* and in this Sturtevant sees evidence that it is a case of voiceless *H*.

(8) IH medial *ῃHἰ*, *ῃHῡ*, with voiceless H, → PIE *əhἰ*, *əhῡ* → *əiἰ*, *əuῡ* in:

(a) Gr. adj. -αῖος (e.g. ἀναγκαῖος, Ἀθηναῖος), Skt -*eya-* (e.g. in *sabhéya-*); most of the headwords to these adjectives are *ā*-stems or *o*-stems, with potential *ā*-stems and thereby with possibly evidence of *H*, according to the laryngeal theory (see 3.2.1.7.1).

(b) Skt gerund ending -*eya-* to Skt *ā*-stems (*deya-*, to *dā-* 'give', *dheya-* to *dhā-* 'put', *meya-* to *mā-* 'measure').

(c) Aorist optative Gr. σταίνην, δόλην, θείην, Skt *stheyāma* (1st. p. pl.) *deyām*, *dheyām*, *jñeyās* (2nd p. sing).

(d) At least certain cases of Gmc Verschärfung: Smith had (1941) explained Gmc Verschärfung by way of Gmc clusters *γἰ*, *γῡ* immediately before the accent, where *γ* reflects *H*. Sturtevant revises this theory thus: PIE *əhἰ*, *əhῡ* (< IH *ῃHἰ*, *ῃHῡ*) have (irrespective of the position of the accent) given Gmc *aiἰ*, *auῡ*, which explains the historical situation. Concerning Verschärfung-words which seem to originate in Gmc *iἰἰ* and *uῡῡ*, he is partly inclined to see them as results of analogical development, but he also takes into consideration the possibility that *ihἰ*, *uhῡ* really gave *iἰἰ*, *uῡῡ* in spite of *iἰ*, *uῡ* being the result that was expected.

(9) From contiguous *H*¹ or *H*⁴ and *H*² PIE *k* has emerged:

(a) PIE 1. sing. pf. -*ka*: Lat. *fēci* (cf. Gr. ἔθηκα), *iēcī* (cf. Gr. ἤκα), Tocharian A *tākā* 'I was'; the same ending is found in the Gr. "καππα-aorists" ἔθηκα, ἤκα, ἔδωκα and also in Gr. pf. which, to judge from Homer, like the endings of the καππα-aorists were confined to the sing.

(b) The factitive ending is *H*² (cf. Hitt. *ḫḫ* in *neuahḫ-* 'make new': Lat. *novāre*) and when it was added to words in -*eH*² (→ *ā*) or -*eH*¹ (→ *-ē*) *k* emerged. An original factitive ending is traced in

-*k(o)*-adj.; cf. the meaning of Lat. *imbricus* 'rain-bringing', *nu-gāx* 'that talks nonsense'.

(10) Voiced *H* (*H*³) and voiceless *H* may turn an adjacent voiceless consonant into a voiced one and a voiced consonant into a voiceless one.

(a) *p* > *b* in Skt *píbatōi* (< *pipH³eti*); *s* → *z* in Gr. *ἔαο* 'blood' (< *esH³or*), *ἥϋς* (< *esHus*).

(b) *g* + voiceless *H* → *kh* (not *gh*!) in Skt *nakhá-* (cf. Gr. *ὄνυξ*, OHG *nagal*, OIr. *ingen*, Lith. *nāgas*, Latvian *nags*).

1.3.1.6 *Lehmann*

Lehmann (1952) accepts the existence of *H* behind more or less the same phenomena in PIE or IE dialects as Sturtevant with the exception of the fact that he, on the one side, does not seem to believe in *k* < contiguous *H*'s, on the other side introduces an *H*-effect concerning certain phenomena in Gmc (of which below) and counts upon an *o*-colouring of *H*³ at the coalescence of *e* and *H*³.

Lehmann's laryngeal system may be described as = Sturtevant's with the exception that *H*¹ and *H*⁴ are seen as a voiceless fricative of an unascertainable type and a voiceless fricative with the chief allophone [h] respectively, and that he considers that to *H*³ should be assigned a labiovelar value. The arguments for establishing the contrast of voiceless (*H*¹, *H*², *H*⁴): voiced (*H*³) as well as for assuming a velar pronunciation of *H*², *H*³ are those that Sturtevant refers to or reasonably should have referred to. The feature of liprounding in the pronunciation of *H*³ is motivated by its *o*-colouring effect. And Lehmann ascribes to *H* a fricative or spirant pronunciation throughout on account of the fact that its possibilities of distribution in the root syllable corresponds only to those found in the fricatives.

But there is also a fundamental difference between the laryngealists Sturtevant and Lehmann. The former only reckons with traces and reflexes in PIE of a pre-IE *H*, while the latter asserts perhaps to a greater extent and more energetically than anyone had done up to that time that *H* had been retained in PIE in the stage of splitting up into dialects, and therefore also in the earliest dialect stage.

He thus considers himself, to begin with, to be able to prove that PIE *H* was retained (as an independent phoneme) in contact with *R* in a consonantal state in Gmc on account of the fact that certain phenomena in that dialect are most easily explained by this means.

These phenomena are:

(1) Verschärfung of *i*, *u*: Briefly expressed, Lehmann's laryngealistic explanation of the Gmc verschärfung is the following:

$e\bar{u}H \rightarrow e\bar{u}\bar{u}$

$a\bar{u}H, o\bar{u}H, \bar{v}\bar{u}H \rightarrow a\bar{u}\bar{u}$

$a\bar{i}H, o\bar{i}H, \bar{v}\bar{i}H$ and $aH\bar{i}, oH\bar{i}, \bar{v}H\bar{i} \rightarrow a\bar{i}\bar{i}$

$i\bar{i}H \rightarrow i\bar{i}\bar{i}$

$u\bar{u}H \rightarrow u\bar{u}\bar{u}$

(2) Certain cases of Gmc *k*(*k*) or *g* vis-à-vis *u* in PIE (and other IE dialects). These are quite a small number of cases, among others: OE *geoguð*, OS *juguð*, OHG *jugund*, to be compared with Skt *yúvan-*, Lat. *iuvenis* 'young'; ON *kvikr*, OE *cwic*, *cwicu*, OHG *quec*, *queh* (but Goth. *qius*): Lat. *vīvus*, Skt *jīvá-*, Gr. βίος, ζῶω 'lives'; ON *noḱkvi*, OE *naca*, OS *nako*, OHG *nacho* 'boat': Skt *náuh* (acc. *nāvam*), Lat. *nāvis*, Gr. νῆϋς (Attic dialect ναῦς). Austin had earlier (1946) coupled this phenomenon to the Verschärfung. While the last mentioned scholar derives the Verschärfung from *h_u*, *h_i* followed by accent, he proposes for $\bar{\iota}h\bar{u}$ -, $\bar{\iota}h\bar{i}$ - a development to *-k-*. Finding on the one side no cases of correspondence *k* (or *kk* or *g*): *i*, on the other cases not only of *u* : *k* but also of *u* : *kk* and *u* : *g*, Lehmann revises Austin's rule thus: $H\bar{u} \rightarrow k(k)$, *g*, whereby he considers it to be probable that the variation *k*(*k*) : *g* depends on different *H*'s.

(3) Vocalic reflexes of *H* in the position *CeRH-*, *CoRH-*. Lehmann presents the following material: OHG *biriḥha* 'birch', OE *haerfest* (**harubist*), *herþan* (**haruþjōn*), OHG *hiruz* and OE *heorot* (**herut-*: ON *hjártr*), OHG *murowi*, *marawi*, OE *mearu* 'tender' (**maru-*: Skt *mūrṇá-*, *mṛṇáti*); OHG *halam* (Gr. κάλαμος Serbo-Croatian *slàma*); OE *hælfter* (**haluftri*); OHG *skiluf*, *skilaf* (: to the same root as OHG *halam* etc.); Goth. *miluks*, OHG *miluk*; OHG *demar* (: Lith. *tėmti* 'grows dark', Skt *támisrā*, *támaḥ* 'darkness'); OHG *emiz*, *emazzi* 'constant, diligent' (: Skt *ámīti* 'plagues'); OHG *anut*, OS *anad*, ON *ōnd* (**anuð-*) (Skt *ātī-*, Gr.

vῆσσα, Lith. *ántis*); OS *wanum*, *wanam* ‘splendid’ (Skt *vāmá-* ‘dear’); OHG *kranuh*, *kranih*, OE *cranoc* ‘crane’. *u*, *a*, *i* in these cases are by Lehmann derived from *ʷ* in *RʷH*, in which position *H* remained longer than the “sound law” *ʷH* → *a* was active.

(4) $\bar{e}^2 < eHR$ -. According to Lehmann \bar{e}^2 originally and above all is derived from a Proto-Gmc *eHR*, in which position *H* remained on account of the following *R*. This is the case for nouns such as Goth. *fēra*, OHG *fiara* ‘side’ (<**peHḱ-*, cf. Skt *sphāyate* ‘becomes fat’, *sphīta-* ‘ample’), OHG *wiara* ‘gold thread’, and ON *vél* ‘cunning’ (to a base *ayə-* ‘weave’, cf. Skt *ūta-* ‘woven’, and therefore < *yeH-r/l-*), and also for preterites of the 7th verb class, for example (Proto-Gmc) *mē²t* (< *meH-ḱ-d-*, cf. Gr. *σμίλη* ‘knife’, ON *smíð* ‘art, handicraft’), (*bannan*:) *bē²nn* < *bhe-H-n-d-*, like Skt *bhaṇati* ‘says’ (cf. Gr. *φημί* (Dor. *φᾶμί*) ‘says’, Lat. *fāma* ‘fate’), (*lætan*:) *lē²t* (< *leH-ḱ-d-*; cf. Lith. *lėidžiu*).

(5) OHG *r*-preterite: to the verbs *bluo²zan* ‘sacrifice’, *būan* ‘live’, *scrōtan* ‘cut (off)’, *stōzan* ‘thrust’ to the 7th, and *scrian* ‘cry’, *spīwan* ‘spit’ to the 1st verb class there are (besides the *r*-less form) *r*-forms in pret. and/or pret. participle (the latter is the case with the verbs belonging to the 1st verb class): *pleruzzun* 3rd p. pl. (of *bluo²zan*), *biruuuis* (2nd p. sing. subjunctive of *būan*) etc. Lehmann considers himself to have support for deriving the *r*-forms < *eHu-* and *iH-*; concerning the development *H* → *r* he, with reserve, refers to the occurrence of *ṽarnu-* for *ṽaḥnu-* in a Hitt. text.

Further, Lehmann considers he can find reason for the supposition that *H* in certain positions is retained in Proto-Gmc. At the same time he considers himself able to establish that Gmc is not unique in this respect. Analogous arguments for retained *H* in other dialects are the following:

(1) The development of initial *ḱ* in Gr.: Except for the fact that Lehmann, like Sapir — Sturtevant, derives Gr. ‘ in one case as $\omicron\zeta$ ‘which’ < voiceless *H* + *ḱ*, he suggests the explanation of what looks like *ḱ* → Gr. ζ as *H³ⁱ* → ζ ; in $\zeta\upsilon\gamma\acute{o}\nu$ an unascertainable *H* is evidenced by Skt compositional lengthening, but the Hitt. *išḫāi-* is to be related to $\zeta\omega\sigma\tau\acute{\eta}\rho\omicron$ ‘girdle’, $\zeta\acute{\omega}\nu\nu\mu\iota$ ‘girds’, which points to PIE *H³ⁱ*-.

(2) Indo-Iranian *kh*, *ph*, *th* < *k*, *p*, *t* + *H⁴*: Lehmann uses argu-

ments presented (chiefly by Pedersen and Kuryłowicz) for interpreting certain Indo-Iranian *kh*, *ph*, *th* as $< k, p, t + H$.

(3) The variegated historical manifestation of \bar{r} , \bar{l} , \bar{m} , \bar{n} in the IE dialects: The varying reflexes of the PIE constructions \bar{r} , \bar{l} etc. (jfr 3.2.2.9) may be understood if it is assumed that $\bar{r}H$, $\bar{l}H$ etc. was retained in the IE dialects. But except for a compositional lengthening that occurs in certain IE dialects at the dropping out of *H*, which is easily understood, Lehmann had to work with the following, all but self-evident, assumptions:

(a) The pre-vocalic variety of \bar{r} , \bar{l} , \bar{m} , \bar{n} , not, as might be expected, the pre-consonantal variety, has in certain IE dialects been chosen in the combinations $\bar{r}H$, $\bar{l}H$ etc. (e.g. Skt *īr*, *ūr*, *ām*, *ān*).

(b) There are developments of \bar{r} and \bar{l} , \bar{m} , \bar{n} in $\bar{r}H$, $\bar{l}H$ etc. that have no correspondence to the development of \bar{r} , \bar{l} , \bar{m} , \bar{n} in other positions: $\rightarrow R\bar{a}$ in Lat. and Celtic, and $R\bar{a}$, $R\bar{e}$, $R\bar{o}$ in Gr., aRa in Gr., Lat., Celtic — Cf. 3.2.2.9.

(4) “ \bar{a} =a uniform zero grade vowel” as well as “ \bar{a} =three different zero grade vowels” are unsatisfactory assumptions. The historical development of \bar{a} , into Indo-Iranian *i* : in other dialects generally *a*, but in Gr. sometimes also *e*, *o*, speaks in favour of a PIE startingpoint $\bar{a}H$.

In this connection Lehmann also asserts that H^3 (*O*) has coloured \bar{r} , \bar{l} , \bar{m} , \bar{n} so that $\alpha\bar{o}$, $\alpha\bar{\lambda}$ etc. have emerged instead of the expected $\alpha\bar{o}$, $\alpha\bar{\lambda}$ etc. in Gr. in cases such as $\xi\theta\alpha\bar{o}\gamma\alpha\nu$, $\xi\mu\alpha\bar{o}\lambda\alpha\nu$ (cf. 1.3.1.10 Kuiper).

It should, finally, be mentioned that Lehmann (like Borgström) does not hesitate to make the assumption: originally one single vowel. Actually he goes further than this and with bold construction he draws up a course of development where the starting point is: no vocalic phoneme. Thus, in the final stage, just before the splitting up into dialects, PIE had a non-phonemic pitch accent. Earlier this was phonemic, and thereby it gave rise to the allophones [o], [ō] that, when the accent lost its phonemic status, became the phonemes \bar{o}^2 and the so-called primary \bar{o} . As soon as the apophonic $\bar{e} : \bar{o}$, just as $\bar{a} : \bar{o}$ in contact with *A*, became phonemic, conditions were created that caused, or facilitated, the dropping out of *H* in the position mentioned, and later in other positions too.

Before the stage of pitch accent there is further a pre-IE period when there was a stress accent, which was also at first phonemic, later non-phonemic.

Before the stress stage there was one more stage. During that pre-stress period it is not possible to speak of a vocalic phoneme but only of a non-segmental phonemic »syllabicity«. When the stress entered as a phonemic one the "syllabicity" developed to the segmental allophones [e], [ē], [ɐ], which, on their part, became phonemes, when the phonemic status of the stress accent ceased.

1.3.1.7 *Martinet (Puhvel, Diver)*

The total view of the laryngealist Martinet is found in Martinet 1957. I here chiefly base my presentation on this work, in which Martinet's contributions of 1953 and 1955 ($O = "A"$ and $H \rightarrow k$ before s) are also mentioned, though more in outline.

Martinet seems on the whole to accept what at this time must be considered to be more generally accepted reflexes or traces of H , such as — except of course the obligatory $\bar{V} : \bar{a}$ and the vowel colour a (and o^2) — certain cases of aspiration in Indo-Iranian, prothetic vowels in Gr. and Armenian, Attic reduplication. We may also note that he believes in Sapir's idea, which was far from being accepted by all full laryngealists, that k could have arisen from contiguous H 's — though not in the misused form which according to Martinet had been given to the idea by Sturtevant, but with careful application; for example in Lat. *costa*, to be compared to Lat. *os* and also to Hitt. *ḫaštāi-* (< contiguous H 's when the word stood after a word ending in H).

Original is Martinet's suggestion of an additional source of Verschärfung ("durcissement") of H , viz. position before s whereby he makes a comparison to Proto-Gmc *sehs* → OE *sex*, *six* but *reht* → OE **rīt* (written *riht*) → *right* [rait]). This is the case, in the first place, with the A found in the person-denoting (according to Martinet originally not exclusively female-denoting) suffix *-eA* (→ *-ā*) which in the nom. in individualized masculine use received the addition s .

Following his sound laws is Lat. *senex* (< **senaks*), vis-à-vis, on the one hand, gen. *senis*, on the other, *senātus* (cf. OE *six* : *riht*). A double levelling which has given *ā* also in the nom. sing. and k in all cases, is assumed to be the origin of *-āk-* in cases

like Lat. *audāx* (gen. *audācis*), Gr. *véαξ*. Further Martinet made so bold as to assume the same origin for a number of *kā*- and *ko*-suffixes.

O (*A^u*) can also be "verschärft" into *k* in this way, according to Martinet. This has taken place in OE *cwic*, OHG *quec* which emanates from the nom. sing *g^uiA^u-s* (of *A^u* see below) while other cases (of the once athematically inflected adjective) are the origin of Lat. *vīvus*, Skt. *jīvā-*. The same ablaut grade of this root + a distinctive feature of pf., -s-, have given Lat. *vīxi*.

Martinet's method of tracing a certain quality in *O* (*A^u*) and a phonological connection between *O* and *A* is original too. On the one hand, he finds examples of a glide or a "*u*-suffix" when *O* is at hand, for example in Gr. *δοῖεναι* (to the root *dō-*), and he also traces an alternation according to sound laws *-ōC ~ āuV-* as a reflex of PIE *-eOC- ~ eOV-* in, inter alia, Lat. *octō* : *octāvus* and Gr. *ἔστωσα* : Lat. *strāvi*; and in Skt *rīṇvati* 'let float' he sees a thematization of the zero grade of *ri-ne-A^u-ti* (\rightarrow *riṇāti* 'let float'), while in *jīnvati* 'enlivens': **jinóti* (constructed from 2nd p. sing. *jínosi*) the formation first mentioned is analogous to *rīṇvati* while **jinóti* is an analogous transformation of **jināti* from the pl. **jinvānti*. On the other hand he presents the theoretical argument that an *o*-colouring *H* should have lip rounding and an *a*-colouring *H* almost automatically should be characterized by the drawing back of the tongue (and raising against the soft palate), i.e. it should have a velar or pharyngeal trait. Through this Martinet arrives at the opinion that *O* (*A^u*) = *A* + the element *u* and that *A* : *A^u* is a counterpart to the couple *k* : *k^u* etc. *A* should be a dorso-velar or a pharyngeal sound and *A^u* a labialization of it.

A more extensive application of what he with regard to linguistic typology considers to be phonological probability has furthermore led Martinet to present the following "laryngeal"-system of 10 *H*'s as reasonable.

		Velars	Pharyngeals	Laryngeals
Without labialization	Vocal cords open	χ	ħ	h
	Voiced	γ	ε	
	Vocal cords closed			,
With labialization	Vocal cords open	χ ^u	ħ ^u	
	Voiced	γ ^u	ε ^u	

Concerning Martinet's reasoning from the above diagram I will only mention that he, in accordance with "vraisemblance phonologique", finds it possible that one or several *H*'s constitute a contamination of the articulation in the larynx (or the pharynx) and other articulation and belongs to a "serie correlative" voiced : voiceless etc. Thus *a* and *o*² require at least one *A* and one *O*. But further there is the possibility of the contrast voiced : voiceless in *A* and *O* which gives 4 *H*'s. For this at least is, further, required one *E*. The limitation of the contrast voiced : voiceless to *A* and *O* is motivated, since it is reasonable that vowel-colouring is connected with the drawing back of the tongue and with lip rounding respectively, and this lands us with sounds where the contrast mentioned is well testified, while the property "non-vowel colouring" makes it reasonable or possible to see *E* as a laryngal or pharyngal where the distinctive contrast voiced : voiceless does not usually exist. But one additional contrast, (post)velar : pharyngal, is possible in *A*, *O*, which would give as many as 8 vowel-colouring *H*'s. And, finally, it is possible that two laryngals are behind *E*.

The distinctive traits of *H* that Martinet considers he can count upon and match against the system that according to him is typologically probable or in any case possible are the following:

(1) Vowel lengthening (before *C*) on account of *H*; seems to be obligatory.

(2) The vowel colour of *a* and *o*² on account of *H*; only initial *a* (< *He*) is genuinely PIE, and *o*², too, commonly has an initial position.

(3) The modification of stops from non-aspirated to aspirated, and from voiceless to voiced through *H*; there is no certain sign of a voiced stop being changed into a voiceless one through *H*.

(4) *H* retained as an independent sound:

(a) In Anatolian (chiefly Hitt.) *h*: He holds that there has been a phonetically caused contrast *h* : *hh* medially (for which reason it is not necessary that every *-h-* is voiced and vice versa.) And he considers it possible that only *hh* represents the vowel-colouring *H*, but this he does not think to be necessarily so. In this connection Martinet points out that "*H*²" has double uses, = *A*, as shown

by Hitt. *ḫ*, and =A, as reflected only in non-Anatolian linguistic material.

(b) *k* resulting from contiguous *H*'s and from *H* before *s* (see above).

In the above points Martinet finds support for his suggested system with 10 *H*'s. It is true that he puts a questionmark against his assumption that the Verschärfung into *k* should require a pharyngal. But here, as in his construction of the rest of the system, he defends his multiplicative method and creation of symmetries with the following arguments: Firstly, there is reason to avoid too hasty combinations of components. Thus, Martinet considers it unwarranted to assume that *o*-colouring and the property "voiced" are exclusive properties in one and the same *H* on account of a case such as Skt *píbatī* lat. *bibo*. Secondly, from a typological point of view the diminishing stock of PIE vowel phonemes that the laryngeal theory brings with it (only one basic vowel?) should be balanced by a larger number of consonant phonemes.

Of those who continued to work along Martinet's lines, or who received impulses from him, I will mention J. Puhvel and W. Diver.

Puhvel interprets (1957) Hitt. *aru* in *aruna*- 'ocean', *alu* in *kaluti*- 'line', and *daluki*- 'long' as < *ṛA^u* and < *!A^u* respectively, a counterpart to Gr., Lat., Celtic *aRa* < *Ṛ*. And this assumed development of *ṚA^u* in Hitt. he later (1960) uses to explain how Skt *sanóti* and Gr. **ǎnūmi* (changed to *ánúō*) are related to Skt *sātá-* (a *seṭ*-form) and Hitt. *šanḫ-* 'try, seek'. He starts out from a paradigm 3rd p. sing. *senA^u-ti*, 1st p. pl. *sṇA^u-més* → *sṇ(n)u-més*, 3rd p. pl. *sṇA^u-énti* → *sṇu-énti*. After the pattern of a *no*-present like *tanóti* : *tanumáh* : *tanvánti*, *sṇ(n)umés*, interpreted as *sṇ-numés*, and *sṇu-énti* has caused a transformation into a *no*-present (the 5th verb class).

Diver constructs (1959) a palatal counterpart, *Eⁱ*, to Martinet's *A^u*. Among other things on account of the length of the vowel before the *ie/o*-suffix in cases like the Gr. fut. *φιλήσω* vis-à-vis the pres. *φιλέω* he interprets *i* in the suffix as "exuded" palatality from an involved *H*. He further sees traces of the same *Eⁱ* in Skt *gáyati* 'sings' (< *geEⁱ-e-ti*), and also in *syáti* (< *sEⁱ-é-ti* 'binds'; but *seEⁱ-* → Lith. *sižti* 'bind').

1.3.1.8 “*Evidence for laryngeals*” (1965)

There is reason to give to the work *Evidence for laryngeals*, second edition (1965), a section of its own in the historical outline. It is interesting, seen as a phenomenon, and it must have been of considerable importance for the attitude towards the laryngeal theory.

Evidence for laryngeals is a collection of articles by laryngealists in which each of the IE dialects is discussed from the aspect: What (special) evidence or support does it offer for the laryngeal theory? In addition to this the work begins with an excellent and detailed historical outline of the theory (by E. Polomé), concluded by a bibliography of what had till then been written on the subject, which is complete to a high degree, as far as I can judge.

I will mention the following about and from the articles of the work:

1.3.1.8.1 “Evidence in Anatolian” (J. Puhvel)

Puhvel discusses the sound value of Hitt. (Anatolian) *ḫ* quite fully, and arrives at the conclusion that *ḫ* may be a laryngeal as well as a pharyngeal, or a postvelar, or velar fricative (or the like), and that tendencies towards a velar occlusion appear especially in a late stage in the Anatolian sphere. Further, Puhvel believes in the so-called Sturtevant’s law concerning the alternation *-ḫ-*: *-ḫ-* (cf. 1.3.1.5), he arrives at the conclusion that at least three *H*’s are reflected in Hitt., *A*, *E*, and *A^u* (the last being taken over from Martinet), and repeats his earlier thoughts on Hitt. traces of the labial element in *A^u* and of the palatal element in *Eⁱ* (see 1.3.1.7).

1.3.1.8.2 “Indo-Iranian evidence” (H. M. Hoenigswald)

Like all other full laryngealists Hoenigswald accepts the explanation of certain voiceless and voiced aspirates in Skt launched by Cuny. Partly original is his structural presentation of the evidence for voiceless aspirate < stop + *H* : On the one hand *th*, *kh*, *ph* constitute *one* phoneme because of the information of the Skt grammar, the lack of position effect and the equivalence to other consonant phonemes regarding the effect of Siever’s law. On the other hand there are signs indicating that *th* etc. were

originally two phonemes: the almost complete absence of consonant clusters beginning with *th*, etc., the fact that *kh* is not palatalized before PIE *e*, *i*, *ī*, a number of cases of what looks like a state II with an enlargement *CRath-* or *CCath-*, where the contact between *t* and *H* agrees with Benveniste's root theory (there should be no vowel before the enlargement *H*), attested set-roots in cases like *math-*, *śrath-*, and, finally, the proof: Avestan *pantā* : *paθō* (see 1.3.1.1 Kuryłowicz).

As for other traces of *H*, which are, according to Kuryłowicz 1935 and/or earlier (see 1.3.1.1), traceable in Vedic, Hoenigswald believes in *H* as the cause of the exceptions from Brugmann's law, and, to some extent, of compositional lengthening.

1.3.1.8.3 "Armenian evidence" (W. Winter)

The unique or more specific contribution to the proof of the laryngeal theory which, according to Winter, is offered by Armenian, may conveniently be divided in three in the following way:

(1) Prothetic vowels, which corresponds well to Gr., inter alia *anun* : Gr. ὄνομα 'name', *inn* : Gr. ἐννέα 'nine'.

(2) Examples of correspondence between PIE *a-*, *o-* : Armenian *ha-*, *ho-*. I will here refer to 3.2.2.10 where the material in question is mentioned in connection with the discussion.

(3) Certain other phenomena which, like (1) and (2), are interpreted as parallels in the development of *H* and *k*, *kʷ*. This is the case inter alia for *mukn* 'mouse' (cf. Gr. μῦς, Lat. *mūs*) and *jukn* 'fish' (cf. Gr. ἰχθύς, OPru. pl. acc. *suckans*), where *k* is interpreted as a reflex of *H* (before the singulative suffix *n*).

1.3.1.8.4 "Evidence in Balto-Slavic" (C. Watkins)

The gist of Watkin's contribution is that there is no special Balto-Slavic proof of the laryngeal theory. The acute accent in Balto-Slavic testifies only to a long vowel, and it is necessary to go outside this IE dialect in order to decide if it is a case of $\bar{V} < VH$ or not. Also *o*² has not, as some scholars have maintained, any reflex in Baltic that is separate from *o*¹.

1.3.1.8.5 "Evidence in Albanian" (E. P. Hamp)

Hamp (in principle) applies the laryngeal system of Lehmann (see 1.3.1.6).

He considers himself able to show that H^4 (an A that is not retained in Anatolian) initially before vowels is reflected by Albanian h or γ , inter alia in *háp-*, *γap-* ‘open’ (connected with Hitt. *apa* ‘afterwards, again, back’, Gr. ἀπό, Lat. *ab*), *hut* ‘empty’ (connected with Gr. αὔτως ‘useless’, Goth. *auþja-* ‘desolate’).

For H^2 (an A that has given Anatolian h) in the same position Hamp finds no reflex. On the other hand he is of the opinion that $H^2\bar{u}-$ has resulted in $h-$, $\gamma-$. Regarding initial H^3 (O) Hamp considers himself able to testify Albanian \emptyset before vowels, but a development $H^3i- \rightarrow \acute{g}-$. The H^1 (E), finally has throughout given Albanian \emptyset .

With the exception of the assumed correspondence $H^4 : h, \gamma$, where Hamp presents about ten examples, we have to do with very slender material, judging from the presentation of the author (in each instance only 2 or 3 cases), which I will not further discuss (cf. 3.2.2.11).

Hamp finds no direct reflexes of medial H . But in *shur(r)*, *šúrá* ‘urine’, a nonappearing development of $s \rightarrow \acute{g}$ speaks, according to him, for PIE *seHur* (from which comes Hitt. *šeḫur*) as the origin.

1.3.1.8.6 “Evidence in Greek” (W. Cowgill)

Cowgill’s article is the longest one. It begins with some general reflections in which the core of the laryngeal theory is described as “ H after so-called primary \bar{V} and ∂ ”, while he thinks the a - and o -colouring of H could have been dispensed with, if there had been any other way of explaining the preference for initial position shown by a and o (cf. 3.2.2.1). He therefore reckons with an a - and o -colouring H (A , O), but not with o^1 becoming a in contact with A . It may further be noted, on this general level, that Cowgill derives $\partial < \bar{H}$ (not $< \bar{v}$ in contact with H), that he does not believe in Martinet’s $k < H$ before s and is sceptical of the effect ascribed to A^u by the same scholar. Regarding the special phenomena in Gr. discussed earlier, Cowgill thinks the assumed traces of voiceless H before R in the beginning of words and of voiced H in the same position to be insufficiently verified. — To a certain extent ∂ gives Gr. ϵ and o ; he finds these ϵ , o only after R , without being able to offer any explanation. The development according to sound laws of \bar{i} , \bar{l} , \bar{m} , \bar{n} before consonants is $q\bar{a}$, $\lambda\bar{a}$,

etc., and that of prevocalic \bar{i} , \bar{l} , \bar{m} , \bar{n} — either $< r, l$ etc. according to Siever's law or $< r\bar{a}, l\bar{a}$, etc. (rH, lH , etc.) — is $\alpha\bar{o}, \alpha\bar{l}$, etc. Other developments are analogical.

1.3.1.8.7 "Evidence in Italic" (C. Watkins)

Watkin's standpoint concerning the specifically Italian support for the laryngeal theory confines itself to his stating that he in principle accepts Martinet's $H \rightarrow k$ before s , which is highly relevant for Italian with, among other things, the cardinal proof Lat. *senex* (: gen. *senis*) vis-à-vis *senātus*, and also in Martinet's A^u and its supposed reflexes, inter alia in the vowel contrast in Lat. *octō* : *octāvus* and in *vī*-pf. What Watkins further has to say is interesting and plausible but under no conditions it is special evidence in favour of the laryngeal theory as compared with the traditional view.

1.3.1.8.8 "Tocharian evidence" (W. Winter)

The chief reflex of \bar{a} (H) in Toch. is B a , A \bar{a} , but in certain cases it coincides with the reflex of PIE e and this is (most?) often the case when Gr. has ε from \bar{a} (cf. the discussion about one or several \bar{a} 's).

In one case when \bar{a} alternates apophonically with \bar{e} , Toch. has $\bar{i} < \bar{i}\bar{a}$, viz. in the optative suffix B \bar{i} , A i (cf. Gr. $\eta : \bar{i}$), while the principal rule is $R\bar{a} \rightarrow R\bar{ä}$ (B *tarya* : Gr. $\tau\acute{o}\lambda\alpha$, *ñemna* pl. 'names', B *prākre*, A *prākār* 'firm', B *lāre* 'dear').

Traces of an initial E are found by Winter in B, A *šām*- 'sit' (cf. Gr. $\eta\sigma\tau\alpha\iota$, Skt *āste*, probably with apophonic lengthening), B *ñem*, A *ñom* 'name' (according to Winter the Gr. inscription ENYMA shows that the original prothetic vowel is here e ($< E$), in spite of Gr. $\delta\nu\omicron\mu\alpha$ and Armenian *anun*), B *ñās*' ($< Emne-ge$; cf. Avest. *mana* 'expression' and Goth. *ik, mik*). The quality of the initial consonants depends on progressive assimilation caused by E .

That not only euH but also eHu has given \bar{u} in the zero stage via uH throughout, that is to say, that the metathesis $Hu \rightarrow uH$ has taken place in the latter case, is by Winter considered to be proved among other things by Toch. B pl. *pwāra* ($< *p\bar{u}hr$) from the sg. *pūwar* 'fire'; from the Hitt. *paḫḫur* and Goth. *fōn* Winter concludes that the full stage must have been PIE $peHur/n$.

In connection with the discussion of these zero grade forms Winter also treats the laryngealistic explanations of the Gmc. *Verschärfung* and certain developments to *k(k)* and *g* (where he finds a small amount of relevant Toch. material). Without going into detail I will here mention that he on the whole accepts the reasoning of Lehmann (see 1.3.1.6).

It should, finally, be added that Winter sees traces of contiguous *H*'s in certain cases of an "extra" *k*, for instance in A locative *lwākam* (B *luwo*, A *lu* 'animal'), *puklākam* (A *pukāl* 'year') and in the preterite-subjunctive stems B *kāka-*, A *kāk-* (to B *kīwa-* 'call') and B, A *tākā* (in A in the subjunctive, however, mostly *tā-*) < PIE *stā-* 'stand', that in the preterite-subjunctive replaces 'be' (cf. 1.3.1.5 Sapir-Sturtevant).

1.3.1.8.9 "Germanic evidence" (W. P. Lehmann)

Lehmann repeats the specifically Gmc. *H*-reflexes that he has drawn attention to in his work of 1952 (see 1.3.1.6).

1.3.1.8.10 "Evidence in Celtic" (E. P. Hamp)

According to Hamp's reasoning the following may be presented as specifically Celtic support of the laryngeal theory.

(1) If the Welsh *craf* 'onion' is derived < *kr̥mh-* we have an explanation of the fact that *m*, and not, as would be expected, *r*, is vocalized in the word. In addition to this the *v* in the Gr. full stage forms *κρέμμων*, *κρόμμων* (cf. MIr. *crem*) point to *H* here being = Martinet's *A^u* (see 1.3.1.7).

(2) In the Welsh word *craf*, discussed under (1), and also in a case like the OIr. gen. pl. *banN* < *g^unAōm* in the word for woman (Gr. *γυνή* etc.) the vocalized *R*, other than *i*, *u*, not unexpectedly shows the same development before *H* as before another *R* and before a spirant, viz. → *aR*.

(3) Welsh *asgwrn* 'bone' may be interpreted as < **ast-* < PIE *ast-*, like Armenian *akn* < *ak^un* 'eye', vis-à-vis initial *o²* in Gr. *ὀστέον*, Lat. *os* and Gr. *ὄσσε* (dual), Lat. *oculus*, respectively. An alternation *o²* : *ə-* is abnormal if these entities are interpreted in the traditional way, while the ablaut *Oe-* (→ *o-*) : *O-* and vocalization of this (→ *ə-*) from a laryngealistic point of view fits into the system.

(4) OIr. hiatus generally originates in the loss of *s*, *γ*, *u*. But traces are to be found of such hiatus (resulting in juncture) also on account of the dropping out of *H* in certain forms of the word for 'spend the night' (cf. P 72), *fīu* 'he spent the night', etc.

1.3.1.9 Schmitt-Brandt

Schmitt-Brandt 1967 is from many points of view an interesting work, original and inspiring.

The author's view of the development of the PIE vowel system and the part played by *H* therein is, briefly, the following: He starts out from an original triad *a*, *i*, *u* (cf. Arabic).

Where comparison as an immediate result gives *a* or *ā*, an original *a*-vowel has been retained, or retained and lengthened in contact with *A* or some variant of *g*, *gh* or *k* (see further below). For the rest a stressed *a* has become *e*. Unstressed *a* has either been reduced into *ə* or has become *o* through "Verdumpfung". The latter development has taken place in those positions where quantitative ablaut could not take place for morphological or phonetical reasons (cf. Kuryłowicz 1956: 36 ff.). *i*, *u*'s character of allophones of the phonemes /i/, /u/ is something secondary. The original phonemes /i/, /u/ can still be traced in expressives and onomatopœias (e.g. Skt *kurkuṭa*- 'cock' Lat. *cucurrio* 'crows' and Gr. *πίπτος* 'young bird', Slovenian *pípa* 'cock' without corresponding full grades) and it may be shown to be probable that the vowel of the zero grade is actually oldest in roots with the ablaut *eu* : *u* and *ei* : *i*, for instance *bheudh*-/ *bhudh*- 'to be attentive' (P 150) and *leik^u*-/ *lik^u* 'leave' (P 669), or with the ablaut *ue* : *u* and *ie* : *i*, for example *dhyen*- 'rumbel, roar' (P 277). The full grade forms are here created analogically to the ablaut *e* : *Ø*. In this connection the root-type "*ǵēi*-" 'germ, crack' (P 355), "*ǵēu*-" 'bend' (P 393) has been of importance, which in the zero grade has *u*, *i* beside *ū*, *ī* and which (contrary to the most common interpretation) according to Schmitt-Brandt contains no long diphthong but an original *eu* or *ei*, respectively, with certain apophonic lengthening. — On the whole PIE lacks radical long diphthongs but shows cases of *u*- or *i*-enlargement of roots with long vowels.

When long diphthongs, in ablaut with *ī*, *ū*, appear so constantly that it can not be a case of ablaut lengthening, we have, as a

matter of fact, to do with the enlargement of roots with long vowels (whereby \bar{u} - and \bar{i} -less forms are generally also found), e.g. $d\bar{a}u-$: $d\bar{u}-$ 'burn' (P 179 ff.), $d\bar{a}i-$: $d\bar{i}-$ 'divide, cut asunder' (P 175), $s\bar{e}i-$: $s\bar{i}-$ 'send off, sow' (P 889 ff.), and the like.

The alternation $\bar{u} : u$, $\bar{i} : i$ in the zero stage of roots of the type of $g\bar{e}u-$ 'bend', $g\bar{e}i-$ 'germ, crack', and $dh\bar{u}en-$ 'rumble, roar' originates in different forms of the "reduced grade" : $\bar{v}u$, $\bar{v}i \rightarrow \bar{u}$, \bar{i} , $u\bar{v}$, $i\bar{v} \rightarrow u$, i , whereby the order between \bar{v} and u or i is decided by the appearance of the full grade, and also by the fact that a metathesis may occur between \bar{v} and the semivowel in order to avoid a consonant cluster or a contact between two R 's.

In this connection it should be mentioned that Schmitt-Brandt also reckons with a metathesis for the same reasons in cases of alternation between states I and II (e.g. $per\bar{k}-$: $pre\bar{k}-$ 'ask') in Benveniste's root theory (whose algebraic constructions from the pieces (a) root of type $CVC-$, (b) PIE suffix eC , and (c) enlargement C , he exchanges for the assumption that PIE simultaneously had roots of different type which on contamination or coalescence have given rise to suffixes etc.).¹ As a background to Schmitt-Brandt's reasoning about primary roots with i and u we should also notice that he reckons with an alternation between a reduced grade with \bar{v} and the zero grade with \emptyset , and that what has usually been seen as R (originally) comes from $\bar{v} + i$, u , r , l , etc., that is to say, there is no category R . In this connection should also be mentioned that he derives $\bar{o} < H\bar{v}$.

O^2 and non-ablaut- \bar{o} are by Schmitt-Brandt derived from Au and uA respectively.

In view of the importance of H for vowel colour, the contrast voiceless : voiced in H (which he derives from the contrast $-h\bar{h}-$: $-h-$ in Hitt.), and the contrasted reflexes \bar{h} (\bar{h}) and \emptyset of H in Hitt., Schmitt-Brandt arrives at the laryngeal system illustrated by the table on p. 33.

In a later stage χ^2 , γ^2 have coalesced with χ^1 and γ^1 , and it is the product of this coalescence that is represented by Hitt. \bar{h} . And analogically a uvular (or pharyngeal) series g^2 , gh^2 , k^2 has earlier contrasted with the velars g^1 , gh^1 , k^1 with which it has later coalesced. — Evidence of the earlier division in two is found in the comparatively numerous cases of PIE a in the middle of the word after or before a guttural (e.g. $kad-$ 'hurt' (P.516), $gal-$

¹ The idea of a metathesis from Maurer 1947.

'call' (P.350), *magh-* 'be able to do' (P.695) besides the many cases of *e* in the same position (e.g. *ker(ə)* - 'grow' (P.577), *gel-* 'to form (oneself) into a ball' (P.357 ff.), *legħ-* 'lay, lie (down)' (P.658 f.)). In contact with g^2 , gh^2 , k^2 , a has been retained, in contact with g^1 , gh^1 , k^1 a has been transformed into *e*.

“Laryngeals”			
Phonetic symbols	Symbols chosen only with regard to the effect on vowel colour	Phonetic features	Counterparts
χ^1	$H^1(E)$	voiceless velar spirant	\bar{h} or $\bar{h}h$
γ^1		voiced velar spirant	
χ^2	$H^2(A)$	voiceless uvular (or pharyngeal) spirant	\emptyset
γ^2		voiced uvular (or pharyngeal) spirant	
h^2		pharyngeal	
One (or several) further $H^1(E)$		perhaps (inter alia) laryngeal(s)	

1.3.1.10 Kuiper

The most important of Kuiper's works relevant to the subject are those from 1947, 1955, 1961. He deals more closely only with the circumstances of Indo-Iranian, whereby he launches a certain support for $\bar{V} < VH$ and/or for a consonantal H being retained in Indo-Iranian (and other IE dialects). I wish to draw attention to the following:

(1) "Laryngeal umlaut": Kuiper assumes, like Lehmann, that O coloured \bar{R} which because of that has given oR instead of the expected aR in Gr. aor. $\xi\theta o\sigma\sigma\omega$, $\xi\mu o\lambda\omega$. And (the first) *i*-vowel in Skt *śīmū-*, *śīmūvant-*, *śīna-* (connected with *sanóti*), instead of the expected a on account of the known development of \bar{n} , \bar{n} , he explains by H being retained in preliterate Indic. There is laryngeal umlaut of Skt \bar{r} [\bar{r}] further in e.g. *tīrná-* < $t\bar{r}Hna-$, while in *pūrṇá-* the preceding labial has coloured the vocalic glide in \bar{r} in $p\bar{r}Hna-$. (Avestan *pərəna-* (not **parnā-*), however, bears witness that H here dropped out in Indo-Iranian).

(2) Kuiper finds traces in Veda of an original Sandhi pattern

in words ending in $-\bar{V}$ ($< -eH$ according to the laryngeal theory): the long vowel actually belongs only before words with initial consonants; before words with initial vowels and in pauses, on the other hand, the vowel is short. The chief, and also the most certain, traces of this pattern are found in instrumentals containing $-t\check{i}$, gerunds with $-y\check{a}$, $-ty\check{a}$ and neut. pl. with $-i\check{}$ and $-a\check{}$; in the case of \bar{a} -stems of nouns Kuiper finds no Skt evidence of this older distribution, but in certain other IE dialects there are, according to him, traces of a vocative form with $-a$ (the expected pause form): Gr. Ζύβωτα, Umbrian *Prestota*, OCS *ženq*. — Kuiper explains this phenomenon by the suggestion that H in retained $-VH$ has dropped out with compensatory lengthening before C - (where V in $-VH$ had length by position), without any such lengthening before vowels and in pauses (where V in $-VH$ had no length by position).

(3) That the remaining H could be vocalized in the IE dialects and not until there (cf. inter alia Pedersen) is revealed by, among other things, different treatment of \varnothing in Skt and Iranian: Skt has a as against Iranian \varnothing in middle syllables and in final position, and also within Skt or Iranian paradigms: Avestan nom. *pitā*: dat. *fədrōi* (i.e. *fd-*) and an analogous alternation between strong and weak cases in Skt in the nouns with $-man$ to set-roots , e.g. *jāniman-* : *jānman-*.

(4) In cases like Skt *carkṛtī-* vis-à-vis the single *kṛtī-* and also in the reduction of the root type $C\bar{V}$ - that has left only the consonant in compounds (*dā-* 'give' : *devā-tta-* 'given by the gods' with the root represented by the first t , *dā-* 'cut, divide' : *āra-tta-* 'cut off') or reduplicated verb forms (*dā-* 'give' : *datta-* 'given', *dadmāḥ*, *dhā-* 'put, lay, stand' : *dadhmāḥ*) the "shortening" consists of the fact that a remaining H in pre-literary Skt has dropped out.

1.3.1.11 Beekes

Beekes 1969 is a voluminous treatment of the phenomena in Gr. relevant to the laryngeal theory in order to show the need of an o -colouring H (O) and in order to prove or support the "starting-points" from which Beekes proceeds. These starting-points are the following:

(1) 2 H 's, E and A are secured and generally accepted. That

there is also need of an *O* — which is not the opinion of all laryngealists — is what he is going to show. There is no reason for assuming further *H*'s, and this is true of *H*⁴ by Kuryłowicz, Sapir-Sturtevant etc., as well as of any other *H*, beyond one *A*, one *E* and one *O*.

(2) *H* is as a rule consonantal in PIE, but *H̥* occurs also; Beekes, then, classifies *H* as *R*.

(3) *H* has in most positions been retained in the IE dialects.

(4) *H* may be vocalized in the dialects.

(5) Hitt. *h* may directly represent PIE *H*.

(6) A series of Indo-Iranian phenomena have also been caused by *H* (cf. chiefly 1.3.1.1 Kuryłowicz and 1.3.1.10 Kuipier): certain cases of aspirates, the occurrence of hiatus testifying to *H* dropped out between vowels, "shortening" of *-V̄* before initial vowels and in pauses in Vedic, so-called laryngeal umlaut, alternation Avestan *Ø* : Skt *i* (< PIE *H* : *H̥*) and alternation *Ø* : *i* in Skt (< paradigmatic alternation *H* : *H̥* in pre-literary Skt) compositional shortening in a case such as Skt *carkṛtī-* vis-à-vis the single *kīrtī-* (which is explained through *H* having dropped out in PIE *kr̥Hti-* in compounds).

Beekes' review and discussion of the Gr. material is rather impressive, and his endeavour to be exhaustive in his account of the material and to stratify the material as to age, or into (probable) IE material and (probable) material of foreign origin, should be praised. Beekes' conclusion is that Gr., chiefly on account of the assumed reflexes of *O* as a prothetic vowel and in set-roots (see below), practically proves PIE *O*, and that this IE dialect also shows, or contributes towards showing, that the remaining starting-points were correct.

Beekes devotes most of his work to the so-called prothesis and to phenomena that directly support the assumption that *H* gave prothetic vowels in Gr., and also to facts concerning the set-roots.

He considers himself able to establish that the prothetic vowels in inherited Gr. linguistic material are constant elements with, word for word, consonant vowel colour : *α* or *ε* or *ο*. And there is a striking correspondence between Gr. and Armenian prothesis (as far as the material allows a comparison to be made).

The assumption "prothetic vowels < *H*" receives support, ac-

cording to Beekes, by the following facts (together with which it constitutes a complex proof of the existence of *H*).

(a) Correspondence of vowel colour between the prothetic vowel and one of the seemingly alternating variants *a* : *e* of the root vowel, in a case like Gr. ἀέξω (cf. Skt *vaks-*, Goth. *wahsjan*) : αὔξω < *Aueks-* : *Aeuks-*.

(b) Compositional lengthening in Vedic, e.g. Gr. ἀνήρ, Armenian *ayr* (with prothetic vowels) : Skt *sūnára-*, *abhī nára-* (< *su Hn-*, *abhi Hn-* → *sūn-*, *abhī n-*).

(c) The negative *νη-*, *νᾱ-*, *νω-* < *ḡE*, *ḡA*, *ḡO* in Gr., for instance *νηγρετός* : ἔγειρω, *νωδός* : ὁδός.

(d) So-called Attic reduplication in Gr.: (α) In an attested root (or, according to Beneviste's way of analysing, a root variant) of the type *HReC-* or *HCeC-*: ἐνήνοχα (cf. ἐνέγκειν), (in Epice, with lengthened *ε*-:) εἰλήλουνθα (cf. ἐλεύσομαι) < *EneEnok-* and *Ele-Eloudh-*, respectively, and a few more; (β) in a not attested state II: ὄλωλα < **OloE-* in alternation with **OelE-* (in ὄλλυμι, ὀλέομαι) and a few more; (γ) in the type ὄπωπα (to *okʷ-* 'see, eye', laryngealistically *Oekʷ-*), where he is unable to find or construct the conditions for "regular" Attic reduplication (i.e. repetition of initial *HRe-* or *HCe-*, the initial *H* becoming a "prothetic vowel" and the *eH* before consonants developing into a long vowel), and therefore sees an analogical development.

Regarding the *seṭ*-roots Beekes thinks himself able to prove that *A*, *E*, *O* have been retained in Gr. with the quality difference remaining. It should further be remarked that he, to a greater extent than his precursors on this subject (Kuiper and Lehmann), works with the so-called laryngeal umlaut. Beekes arrives at the following, briefly expressed:

(a) In the full stage *CeRA-*, *CeRE-*, *CeRO-* → Gr. *CeRa-*, *CeRe-*, *CeRo-*.

(b) In the zero stage *CṛA-*, *CṛE-*, *CṛO-* has been retained in Gr., and there they have, through laryngeal umlaut of (the vocalic segment in) *Ṛ*, given *CRā-*, *CRη-*, *CRω-*.

(c) Unstressed *seṭ*-roots before consonants also had the appearance *CṛRH-* (with the root vowel reduced to *ṽ*), of which in Gr., as in Celtic and Lat., is found the reflex *CaRa*; in Gr. there is, further, some — though still uncertain — evidence of *CṛRE-*

and *CbRO-* having given *CεRε-*, *CoRo-* in Gr. (with an *H*-colouring of *ɐ*).

(d) In the zero grade before vowels there is the development *CRA-*, *CRE-*, *CRO-* → Gr. *CaR-*, *CεR-*, *CoR-* (with an *H*-colouring of the vocalic segment).

For the rest I will here only mention Beekes' account of assumed specifically Gr. evidence of *H* in the end of words.

There is, to begin with, *-a/ja* in contrast with *ī* in other IE dialects in the nom. and acc. of *īā/ī-*stems (nom. *πότνια*: Skt *pátñī*) and Gr. *-a/ja*, *-va/Fa* vis-à-vis *-ī*, *-ū* in the nom. pl. of *i-* and *u-*stems in other dialects (*τρία*: OCS *trī*, *δάκρυα*: OIr. *dēr* (**dakrū*)). Beekes is (especially when considering the great inclination towards vocalization of *H* which he thinks himself to find in Gr.) most inclined to see a specifically Gr. development of *iA*, *uA* in this, as most (all?) other laryngealists have done. At the same time, however, he does not consider it impossible that in the nom. pl. an analogous spreading from the consonant stems has taken place, and that the *-a/ja* in *īā/ī-*stems originates in the acc. *-īŋ* (before words with an initial consonant).

Furthermore, Beekes believes, as mentioned above, in Kuiper's explanation of the "shortening" of *-V̄* before words with initial vowels and in pauses (chiefly in vocative forms) in Vedic. And, like Kuiper, he is willing to explain in the same way vocatives of *ā*-stems with *-a* in other languages; inter alia a few in Gr., where, however, 10 Homeric epithets of gods and heroes ending in *-a* are interpreted as original vocatives by Beekes too.

1.3.1.12 Keiler

Keiler 1970 is a recent laryngealistic work of considerable importance. As regards Keiler's standpoint within the framework of the 'full laryngeal theory' I will begin by remarking that he, on account of Hitt. *ḫ* and other things, finds three *H*'s necessary, one *A*, one *E*, and one *O*, not more. Further, Benveniste's reasoning (see 1.3.1.3) has more than anything else proved to him the advantages of the assumption of *H* in PIE and of *H=R*.

As reflexes of *H* Keiler accepts: (a) Hitt. *ḫ*, (b) in other IE dialects: *eH* → *V̄* (through compensatory lengthening at the dropping out of *H* before consonants), *ə* < *H* (see below), the vowel

colours *a* and *o*, Indo-Iranian (voiceless) aspirates and $HR \rightarrow 'R$ in Gr. (cf. 3.2.2.12).

Starting with these reflexes it is necessary, says Keiler, to try to find a phonological system, which typologically, with regard to distinctive traits, is inviolable, and to seek its manifestations in known languages (cf. 1.3.1.7 Martinet).

In the first place Keiler bases his reasoning on the vowel colouring effect of *H*, in the second place on the relation $H=R$. Pharyngalization or "flatness" or emphasis (also manifested as lip rounding, generally seen) and the laryngals of Arabic (or Proto-Semitic) give him the best typological guidance. The four Arabic (and Proto-Semitic) laryngals and pharyngals are arranged by him in the following system of distinctive traits

	ʔ	ʕ	h	ħ
flat/plain	—	+	—	+
tense/lax	—	—	+	+

The acoustic side of the primarily pharyngalized or emphatic *ħ* and *ʕ* are, more than is the case with the secondarily pharyngalized consonants, the lowering of the second formant of the contiguous vowel. *ʕe*, *ħe* are thus abnormal (it should hereby be observed that pharyngalization and velar pronunciation is more marked in contact with *ʕ*); on the other hand *he*- (and *ʔe*) are acceptable.

ħ, *ʕ* are actually to be classified as *R*. The properties "suboral voice quality articulation" (pharyngalization, "tenseness", "laxness") and "oral resonans" are simultaneously present but separate. When the latter trait dominates, *ʕ*, *ħ* are at hand. Support for this is found in descriptions of *ʕ* and *ħ* that have been made. — But vocalic pronunciation of *h* is more difficult to find support for.

Keiler then launches the system $E=h$, $A=ħ$, $O=ʕ$. *ə* is neutralization of *E*, *A*, *O*.

Other plausible reflexes (see above) are then, without supporting hypothesis, compatible with this laryngeal system, constructed on the basis of the traits vowel colouring and $H=R$. "Tenseness" goes well with aspiration through *H*, just as with Gr. $HR \rightarrow 'R$, and Hitt. *-ḫḫ-* (vis-à-vis *-ḫ-*); "tenseness" may manifest itself as aspiration, voicelessness, length.

As phonological parallels to the alternation between vocalic and consonantal h and ʕ in Arabic Keiler points out, following other scholars, (a) concerning the so-called h -prosody in the Hausa language that "its implications in the V position are short duration and lax articulation, and in ? the C^2 position, voicelessness", (b) that several modern Indian languages, too, show alternation in laryngals between consonantal and "vowel-like phonemes" (86).

Keiler also thinks himself to find a strong support for his phonological reasoning in Maltese. According to the description on which he bases his presentation, this Arabic dialect has one pharyngalized series with long vowels and one series with weak pharyngalized vowels (the latter is possibly erroneously constructed, however, on the basis of what is actually a vowel phoneme + ʕ) which both originate in ʕ followed or preceded by a vowel and whose description tallies well with the description Keiler wants to give of vocalic ʕ (and h). He also points to the fact that the pharyngalized vowel usually has a -colour; then e - and o -vowels are the most common, while pharyngalized i and u are unusual. In Maltesian phonematization of ʕ 's change of the vowel, Keiler sees the nearest phonological parallel to the PIE situation he has in mind and a confirmation of the active and inherent nature that he has ascribed to the PIE "laryngeals".

1.3.1.13 Lindeman

F. O. Lindeman's *Einführung in die Laryngalthorie* (1970) has been given a section of its own in this historical outline above all because the work is interesting seen as a phenomenon and probably has had considerable importance for the acceptance of the theory among scholars. It is reasonable to suppose that on account of Lindeman's work more people than before consider the theory as established and proved. For, starting out with the conviction that the core of the laryngeal theory is beyond all doubt,¹ he considered that it was time for a concise handbook (and textbook) on the subject.

To the core of the theory he also seems to count the thesis: all roots with initial V - < He -.

As regards certain well-known questions at issue within the (modern, full) laryngeal theory he takes up the following position:

¹ "An die Richtigkeit der Grundlage der 'Laryngalthorie' kann unserer Auffassung nach heute nicht mehr gezweifelt werden" (31).

(a) The “laryngeals” constitute “Konsonanten im eigentlichen Sinne — also — im Gegensatz zu Vokalen und Halbvokalen” and \varnothing originates in a non-phonemic vocalic segment in contact with H (88 f.).

(b) The fact that \varnothing has led to the different results: Indo-Iranian i : in other dialects a (Gmc also u ?; on Gr. ϵ , o see below), indicates that H in the position CHC had not dropped out and \varnothing had not emerged until in the IE dialects. Since the different H 's have, for the rest, given the same reflex, he considers it probable that $\varnothing = \text{Gr. } \epsilon, o$ (corresponding to the normal grade \bar{e} and \bar{o} respectively, or without any known corresponding full grade) depends on analogy. The common reflex of \varnothing may be understood, if coalescence of E, A, O in the final stage is assumed, after the colouring of e in contact with A, O (cf. 1.3.1.4 Couvreur).

(c) The ablaut $e : o$ is probably not retained in contact with A . To a development $Ao, oA \rightarrow a, \bar{a}$ which Lindeman finds phonetically hard to understand, he (like Borgström) prefers the chronology: first vowel colouring on contact with A and O , then qualitative ablaut $e : o$ which did not then affect the a arisen from e in contact with A and naturally did not change the quality of o^2 .

(d) Like most other recent laryngealists he feels it is a drawback that the full laryngeal theory seems to give the result: PIE had only one vowel phoneme or (see 1.3.1.6 Lehmann) no vowel phoneme at all — this being the case if all i 's and u 's originate in an allophonic alternation $[i] : [i]$, $[u] : [u]$ in the phonemes $/i/$, $/u/$. Lindeman tries to escape this conclusion by referring to Pulleyblank 1965:86 ff., who presented the idea that a higher and a lower vowel in pre-IE (something like $\varnothing : a$) coalesced into e in PIE, and to Martinet, who considers it possible that a dominant phoneme $/e/$ existed before the ablaut, and that its development created the PIE vowel system (see 1.3.1.7).

As regards the reflexes of H in only one, or a few, IE dialects assumed by Kuryłowicz, or by others, Lindeman believes in H as the cause of the following phenomena: (a) certain cases of voiceless aspirates and (with more reserve) voiced aspirates in Indo-Iranian, (b) compositional lengthening in Indo-Iranian, (c) hiatus in Vedic, as traces of a lost H (with some reserve or hesitation), (d) k emerged from contiguous H 's, in cases like Lat. *costa* ‘bone’, vis-à-vis *os* ‘bone’ and Proto-Gmc *hauzjan* ‘hear’ (Goth. *hausjan*,

ON *heyra*, etc.), (e) special cases of $VHC/R \rightarrow \bar{V}C/R$ in Lat. *ēmi* (*He-Hm-ai*).

On the other hand Lindeman does not believe in the following things:

(a) voiceless initial $H+R \rightarrow \text{'}R$ in Gr. (b) H behind Attic reduplication, (c) Martinet's A^u and Diver's E^i (and the reflexes associated with them), (d) voiced H behind b in Skt *pībati*, (e) retained H in Gmc (or Gmc h as a reflex of H) behind the Gmc Verschärfung.

As a new departure, partly his own, concerning reflexes of H , Lindeman (with some reservation) presents the suggestion that H_i , iH and H_u , uH in certain cases had become ii and uu respectively, in PIE. This should according to Lindeman have taken place in optatives such as Skt *jñeyās*, Gr. γνóιης, Skt *deyām*, Gr. δοίην, in the Gr. suffix -αῖος (=Osc-Umbrian -ai(i)a) and also in cases like Gr. γλοιός, OE *clæg*; here we have, according to Lindeman, the origin of the Gmc Verschärfung.

Concerning the relation between H and Hitt. h he reckons with a voiceless H behind medial hh , sees "ə" as reflected by $h(h)$ and no certain instance of $\partial = \text{Hitt. } a$, and he finds $h(h)$ as well as \emptyset where the theory has E or A or O (even if he considers the material that speaks for A and $O = \emptyset$ and for $E = h$ to be slender).

The last mentioned relation in combination with theoretical deliberations inspires Lindeman to construct the following laryngeal system (with 2 A 's, 2 E 's, 2 O 's) of dorsal fricatives (cf. Martinet's system).

"Laryngeals"	palatal	velar	labiovelar
voiced	γ^v (<i>e</i> -coloured <i>H</i>)	γ (<i>a</i> -colouring <i>H</i>)	γ^u (<i>o</i> -colouring <i>H</i>)
voiceless	χ^v	χ	χ^u

The voiced variant of A (γ) and O (γ^u) has dropped out in Hitt., while, in contrast to this, it is the voiceless variant of E (χ^v) that has disappeared in this language (however, he considers the support for $h < E$ all round to be uncertain).

1.3.1.14 Summary of the contents of the modern full laryngeal theory

The modern laryngeal theory has its foundation in the fact that Anatolian h from Kuryłowicz 1927 (and Cuny 1927) and onwards

has been considered directly and immediately to prove the basic thought of Saussure (see 1.1) in its revised form with a (basically) consonantal *H*, which had been given to it by Möller (Pedersen, Cuny) (See 1.2.1).

Above I have presented what is most essential in the modern full laryngeal theory by selecting and giving an account of the versions and/or new additions or applications of it in laryngealists that have had the most importance for the construction and modification of the theory (Kuryłowicz, Sapir and Sturtevant, Martinet, etc.); at the same time I have also taken up some recent works which are of interest mostly as phenomena (Beekes 1969, Lindeman 1970). The summary given below is intended to serve as a complement to the presentation given, based on authors and their works. The dispositional basis of the summary is the content of the theory and the variations within it.

1.3.1.14.1 The base or core

(1) Behind *ə* are two or more (usually three or four) PIE *C*'s or *R*'s, that is *H*'s, which are directly (or, at least, with an exclusive linguistic sound) reflected only by Anatolian *ḫ*.

(2) Except for being behind "schwa primum" (*ə*) *H* causes the following phenomena: the "fundamental long vowel" (\bar{V}), the ablaut $\bar{V}:\bar{a}$, (at least partly) the alternation between *ə* and \emptyset . The full grade *e/o*¹*H* has given \bar{V} before a consonant or in a pause. The zero grade of *e/o*¹*H* has become \bar{H} (or *ṽH* or *Hṽ*) → *ə*, or *H* with its consonantal character retained (or without a contiguous *ṽ*) → Anatolian *ḫ*.,

↘ \emptyset in other IE dialects except certain indirect or at least not exclusive reflexes (see 1.3.1.14).

(3) Vowel colouring by *H*: All assume:

(a) one or two or more *a*-colouring (or *a*-retaining) *H*'s (*A*'s) that (in principle) throughout cause *a* in the following way: *eA* (and *o*¹*A*?) before consonants and in pauses → \bar{a} , *Ae* (and *Ao*¹?) → *a*.

(b) one (or more) *H*'s (*E*'s) that tolerate an adjoining *e* (and *o*¹) : *eE* and *o*¹*E* before consonants and in pauses → \bar{e} and \bar{o} respectively, *eE* and *Eo*¹ → *e* and *o* respectively.

The majority of the full laryngealists (now all?) also employ an *o*-colouring *H(O)* : *e/o*¹*O* before consonants and in pauses → \bar{o} ,

$Oe/o^1 \rightarrow o$ (o^2). Some of them, however, deny that there is any justification for the constructions o^2 and fundamental \bar{o} , and thereby for an o -colouring H .

1.3.1.14.2 Other, more special, applications of the laryngeal theory

We are here exclusively concerned with phenomena found only in a few, or in one IE dialect (nearly only in dialects other than the Anatolian, especially in Indo-Iranian and Gr.). I will only include facts which have been mentioned above in the presentation of the contributions to the theory of a few selected laryngealists (cf. 3.2).

1.3.1.14.2.1 Special cases of $VH \rightarrow \bar{V}$ (and alternation $\bar{V} : \bar{o}$) or $iH, uH \rightarrow \bar{i}, \bar{u}$

(a) the present formant $-n\bar{a} < -neA$ (Saussure) or (as a special case of (b)) $< n+eA$ (Benveniste).

(b) $\bar{V} : \bar{o}$ as a suffix or ending or the like $< VH$; this is the case concerning the variant $CR\bar{V}$ - of set-roots (of a $CR\bar{e}H$ - in which Maurer and Schmitt-Brandt sees a metathesis of $CeRH$ -), \bar{V} (interpreted) as a root enlargement, and $-\bar{a}$ in fem. noun stems and in the neut. pl.

(c) Skt lengthening of final vowels before initial consonants, "Attic reduplication" and comparable Skt reduplication, long augments in Gr. and Skt (see chiefly 1.3.1.1 Kuryłowicz, 1.3.1.5 Sapir—Sturtevant).

(d) Gmc \bar{e}^2 (see 1.3.1.6 Lehmann).

(e) Lat. pf. $\bar{e}di$, $\bar{e}mi$, $\bar{e}pi$ (see 1.3.1.5 Sapir—Sturtevant).

(f) $m\bar{e}$, $n\bar{e}$, $s\bar{e}$ (see 1.3.1.5 Sapir—Sturtevant).

1.3.1.14.2.2 "Shortening" of \bar{V} before vowels and hiatus in Skt

See 1.3.1.1 Kuryłowicz, 1.3.1.7 Martinet.

1.3.1.14.2.3 A specific Gr. occurrence of $\bar{\xi}$ in the negative

$v\bar{\alpha}$ -, ηv -, $v\omega$ -

See 1.3.1.11 Beekes.

1.3.1.14.2.4 Explanation of certain "peculiarities" in \bar{o}

(a) Alternation $\bar{o} : \emptyset$ between different IE dialects or within one and the same dialect, something that many (probably most)

laryngealists trace back to a contrast \bar{H} (or $\bar{v}H$ or $H\bar{v}$) : H . Thus in Goth. *daúhtar*, Avestan *duγdar-*, *dugədar*, Lith. *duktē*, the middle vowel found in Skt *duhitár-* and Gr. *θυγάτηρ* has never existed and in Avestan *pitā* (nom.) : *fədrōi* (dat.) a paradigmatic alteration \bar{H} (or \bar{v} beside \bar{H}) : (only) H , is reflected. Special cases of vocalization of H (or the emergence of \bar{v} in contact with H) are found in Gr. $\alpha/F\alpha$ vis-à-vis the \bar{i} , \bar{u} of other dialects, and also in Gr. and Armenian prothesis. — See chiefly 1.3.1.2 Pedersen and Hendriksen, 1.3.1.6 Lehmann, 1.3.1.11 Beekes.

(b) The zero grade of the set-root ($CeR\bar{a}-$), “ $C\bar{R}_0-$ ” before consonants, $C\bar{R}_0-$ before vowels, are considered to require “a consonantal \bar{a} ” (a theory that has probably as a rule been taken over from Cuny by the modern laryngeal theory), like the dropping out of \bar{a} before vowels without contraction products (see 1.3.1.2 Pedersen and Hendriksen).

(c) The so-called laryngeal umlaut (see 1.3.1.10 Kuiper).

1.3.1.14.2.5 Certain other reflexes of H

(a) A certain occurrence of Armenian h and Albanian h , g' , γ (see 1.3.1.8.3, 1.3.1.8.5).

(b) The Verschärfung of $H \rightarrow k$ when H 's are contiguous or before s (see 1.3.1.5 Sturtevant, 1.3.1.6 Lehmann).

(c) $HR-$, chiefly $Hi-$ (and $H\bar{u}-$), in Gr. (firstly) $\rightarrow \bar{r}$ (see chiefly 1.3.1.5 Sapir—Sturtevant, 1.3.1.6 Lehmann).

(d) V followed by H and i or $\bar{u} \rightarrow V\bar{i}\bar{i}$, $V\bar{u}\bar{u}$ in certain formations (inter alia in material that has started off the Gmc Verschärfung) or in Gmc Verschärfung-words (the phenomenon being then interpreted as a basically Gmc development). — See chiefly 1.3.1.5 Sapir—Sturtevant, 1.3.1.6 Lehmann.

(e) The following (chiefly) Indo-Iranian or Skt phenomena: certain cases of the voicing of stops upon contact with H (see chiefly 1.3.1.1 Kuryłowicz, 1.3.1.5 Sapir—Sturtevant).

(f) OHG r -preterite (see 1.3.1.6 Lehmann).

(g) The skewed distribution of $a-$ (and $o-$) vowels in PIE (see 1.3.1.7 Martinet).

(h) A root alternation $ReC-$: $aRC-$ (inter alia in Gr. $\acute{\alpha}\lambda\acute{\epsilon}\gamma\omega$: $\acute{\alpha}\lambda\gamma\omicron\varsigma$, $\acute{\alpha}\acute{\epsilon}\xi\omega$: $\alpha\breve{\upsilon}\xi\omega$). — see 1.3.1. Kuryłowicz.

(i) The effects or the reflexes of “ Au ” and “ Ei ” (see 1.3.1.7 Martinet).

(j) The parallelism that arises between $u\bar{q}$ - and $uebh$ - 'weave' and between $m\bar{e}$ - and med - 'measure' and in a few other analogous cases, analysed thus: $u-eA$ - : $u-ebh$ -, $m-eE$ - : $m-ed$ -, etc. (see 1.3.1.1 Kuryłowicz, 1.3.1.4 Couvreur).

1.3.1.14.3 Variations of the laryngeal theory

The most important variations of the theory, within the framework that is common to all full laryngealists, may be presented in the five points below.

1.3.1.14.3.1 Regarding the construction of the laryngeal theory:

All full laryngealists are agreed that the effect of H on vowel colour requires (at least) one A and one E . Most of them, further, reckon with o^2 and a non-apophonic \bar{o} and need (at least) one O .

Some confine themselves to an "algebraic" system with A, E, O , constituted by the ablaut $\bar{V} : \bar{o}$ (and peculiarities in \bar{o}) and the occurrence of \bar{a} and the so-called fundamental $\bar{\text{ö}}$, and to a more general assumption that the Anatolian \bar{h} verifies this system. Among these may be counted Beekes and Kuiper.

This more or less pronounced functional attitude, a legacy from Saussure, is also found in Kuryłowicz. But it should be noticed that the latter has, under the influence of Sapir—Sturtevant, made a compromise: an H^4 is introduced which is at hand when A seems to correspond to \bar{O} in Hitt. Observe also that Kuryłowicz works with the distinction voiced: voiceless and with a certain componential analysis of H .

Others have seen reason to test the "algebraic theory" against circumstances in Hitt. and/or to attempt to outline the phonetic or phonological reality behind it. Thus in Sapir—Sturtevant and Couvreur, among others, are found laryngeal systems with phonetic symbols and an extensive discussion of Hitt. material, which in the former leads to the setting up of 2 A 's and 2 E 's (one of which has the property "voiced" which Kuryłowicz ascribed to his H^3) and in the latter to the assertion that Hitt. confirms the functional triad A, E, O and that there is no plurality behind these symbols.

Again structural phonological deliberations (combined with a more careful study of the occurrence of \bar{h} in Hitt.) have created Martinet's 10 H -system, and also Lindemann's system of 6 H 's.

1.3.1.14.3.2 Regarding the relation between *H* and *h*:

Opinions differ greatly about the relation between the construction *H* and the assumed proof of the Anatolian *h*. All full laryngealists have to some extent considered themselves obliged to reckon with developments between *H* and *h* which may be said to be unnecessary or unwarranted from the point of view of the laryngeal theory purely as a theory. Besides, most laryngealists have to some extent revised the laryngeal system, and especially in so doing they have reckoned with further *H*'s, above all with two *A*'s, on the basis of the appearance of *h*.

All laryngealists see a reflex of *A*, and now also (?) of *O*, in *h*, while there is still (?) disagreement about whether *h* also corresponds to *E*. For illustration of the above see, for example, 1.3.1.2 Pedersen—Hendriksen, 1.3.1.4 Cuvreur, 1.3.1.5 Sapir—Sturtevant, 1.3.1.13 Lindeman.

The great majority of laryngealists (now all?) see in Anatolian an IE dialect, but a few, chiefly Sturtevant, regard Anatolian as a sister language to PIE. With the latter assumption it is possible to explain the correspondence Anatolian *h* : Indo-Iranian, Gr., Lat. etc. *Ø* — in so far as one does not see traces of *H* in non-Anatolian IE dialects that make the assertion '*Ø*' false — through *H* having remained in the one and disappeared in the other language. If, on the other hand, Anatolian is regarded as a PIE dialect, it is necessary to reckon with *H* in a PIE that is split up into dialects, and with the loss of *H* in all dialects except Hitt.

1.3.1.14.3.3 Regarding *ə*:

(a) Some authors (inter alia Cuvreur, Pedersen and Hendriksen, Benveniste, Keiler) interpret *H* as *R* and trace back *ə* to the vocalic allophone thereof (*H*), others (for instance Kuryłowicz, Sapir—Sturtevant, Lehmann, Schmitt—Brandt) give to *H* an exclusively consonantal character and derive *ə* from a reduced vowel or anaptyctic vowel in contact with *H* (*əH* or *Hə* or both). The phonetic sphere within which the Anatolian *h* reasonably belongs (cf. 2.3.2) has generally been considered to give evidence in favour of *H*=*C* and the assumptions of *H*=*R* are probably partly made contrary to the author's own better knowledge, from a wish to keep the basic idea of Saussure. In any case it is only Keiler who presents plausible phonological-phonetic reasons for deriving *ə* < *H*.

(b) The laryngealists have from the traditional comparative IE linguistics taken over the controversy as to which is fundamental, the Gr. triplet of reflexes (α , ϵ , o) of the construction \varnothing , or the uniform counterpart to the same construction found in the remaining IE dialects (a or, in Indo-Iranian, i). I will here only remark that some, Couvreur among others, who have decided that \varnothing originally was uniform, are of the opinion that the laryngeal theory here has a great advantage : $\varnothing < H$ did not emerge until after E , A , O had coalesced.

1.3.1.14.3.4 Regarding the time for the disappearance of H
in IE dialects other than Anatolian:

Sturtevant (and his followers) who on the basis of his construction "Indo-Hittite" was able to assume that PIE (in contrast to its sister language Anatolian) had only retained certain reflexes of H , differs most distinctly from the others, who must reckon with, and to a varying degree do reckon with, H being retained in a dialectal phase of PIE (cf. B above).

1.3.1.14.3.5 Regarding the treatment of o^1 , and apophonic \bar{o} in
contact with A :

Certain authors (for example Couvreur and Lehmann) think that o^1 too became an a -vowel when in contact with A . They thus reject the slender material that has been considered to contradict $Ao \rightarrow a-$, $oA \rightarrow \bar{a}$, chiefly Gr. $\acute{\alpha}\nu\tau\omicron\varsigma$ 'point', Lat. *ocris* 'mountain, height', and Gr. $\varphi\omega\nu\acute{\eta}$ 'voice': $\varphi\eta\mu\acute{\iota}$ (Doric $\varphi\bar{a}\mu\acute{\iota}$). Borgström (followed by Lindeman) wants to avoid the assumption of an ablaut of this kind by introducing the chronology : first $e \rightarrow a$ in contact with A , then the ablaut $e : o$, which will then not affect $a < e$. Others (inter alia Cowgill) think that an o^1 , arisen in contact with A , has not been coloured by this "laryngeal" A and accept an ablaut $a : o$ and $\bar{a} : \bar{o}$, or reckon with a total loss of the apophonic contrast $a : o$ and $\bar{a} : \bar{o}$ through analogy.

1.3.1.14.4 The supports or proofs of the laryngeal theory

The following grouping is perhaps the most suitable for the facts that have been used as supports or proofs of the laryngeal theory (or that may be so used if a "laryngealistic fundamental view" is applied): (1) Anatolian h , (2) phenomena in IE languages other

than Anatolian.¹ The proof or support of type (2) is discussed in chapter 3. This is still the proof considered to confirm the laryngeal theory as a theory. The facts under (2) may be divided into (a) more general (structural) proofs or supports, (b) more specific proofs or supports.

To Saussure the fact that the theory of “les coefficients son-antiques” gave structural uniformity and simplicity probably seemed an advantage of the theory that gave it indisputable proof. There may still be something of this fundamental view of Saussure left in the modern full laryngeal theory. However, it seems as if the most common attitude is now something like this: If the construction *H* is consistently used, all PIE ablaut alternations may be reduced to the *e/o* : *Ø* (or “schwa secundum”)-pattern, and more specific, probable or unavoidable, reflexes of *H* (morphological or phonetic puzzles or “extra” sounds that may be explained by its help) give us the right to this reduction. But at the same time Saussure’s hyper-simple vowel system, one single fundamental vowel, is probably somewhat embarrassing to most laryngealists. Some at least try to rescue *i*, *u* as original vowel phonemes (among others Kuryłowicz and Schmitt—Brandt) or see older plurality behind *e* (Martinet) or a fundamental *o*, placed in a secondary ablaut relation to *e* (see 1.3.1.13 Lindeman).

The special types of proof or support (other than Anatolian *h*) indicated may briefly be described as the phenomena mentioned above under 1.3.1.14.2.

1.3.2 The reduced laryngeal theory

Some scholars, who have thought along laryngealistic lines, have made reductions of the core of the modern laryngeal theory (as described in 1.3.1.14.1). I will mention three representatives of

¹ There may seem to be reasons for listing a third category: “PIE loans in Uralic languages”. I am referring to the three Uralic words which, according to Sköld 1959, possibly reflect the PIE *H*, the South Lappish *duokë* ‘sell’, combined with the Finnish *tuo-* ‘bring’, etc. (interpreted as a loan from PIE *dō-* ‘give’), the Finnish *tehdä* (stem *teke-*) etc., (interpreted as a loan of the PIE *dhē-* ‘put’) and the Finnish *puhdas* ‘clean’, (interpreted as a loan of the PIE *pāto-*). But Sköld is evidently not willing, and quite rightly, to take this to be a support of the laryngeal theory. The uncertainty is of several dimensions. In all the cases the loan-theory may be disputed, but this is especially the case concerning the word *puhdas* (found only in Baltic

this reduced laryngeal theory. In one of them (Kuryłowicz in his later works) the whole or most of the core may be said to remain, but only a part of it is applied without exceptions. Another scholar (Zgusta) applies only a part of the core (but that part without exceptions), while a third (Szemerényi) has only a "miserable" residue left of the full laryngeal theory.

1.3.2.1 *The later Kuryłowicz*

According to Kuryłowicz 1962, 1964 it is only a , \bar{a} that invariably necessitates $H(A)$. Concerning the so-called fundamental long vowels \bar{e} and \bar{o} he reckons with $\bar{V} < VH$ as well as with a really fundamental \bar{V} , and he does not consider himself to need any "laryngeal" O . As Kuryłowicz now assumes fundamental i - and u -vowels (from which the secondary diphthongs ei , eu may have arisen) he arrives at a PIE vowel system which is the traditional one minus \check{a} and ∂ . On the whole the same view is found in Kuryłowicz 1968 (see p. 205, 206 and also 199, 200).

1.3.2.2 *Zgusta*

According to Zgusta 1951 the core of the laryngeal theory lies in the fact that it explains "fundamental" \bar{V} and ∂ and the ablaut between them. So-called fundamental \bar{e} , \bar{a} , \bar{o} he traces back to the combinations eH , aH , oH . A uniform H has here lengthened the fundamental vowels e , a , o . This means, of course, that Zgusta also sees fundamental vowel colour in the short vowels a and o^2 . According to Zgusta the Hitt. material (with h or \emptyset in the positions in question) agrees with this reduction of the laryngeal theory.

1.3.2.3 *Szemerényi*

Szemerényi (1967) presents the most strongly reduced laryngeal theory. Or perhaps it is more correct to say that he exchanges the laryngeal theory for his very "meek" h -theory. This theory is to the effect that eh , ah , oh partly lie behind the so-called fundamental long vowels. Partly \bar{e} , \bar{a} , \bar{o} are really fundamental. His h has no vowel colouring effect. For deciding whether \bar{V} is funda-

Finnish) and the South Lappish *duokë-*, which need not necessarily have any connection with the Finnish *tuo-*, etc. And, further, the remaining *tehdä*, etc., may originate in a PIE k -form (cf. Lat. *facere*, *fēci*) which explains the k in the stem from *teke-*.

mental or originates in Vh he only knows one test: Hitt. (\bar{h} or \emptyset ?). An established ablaut $\bar{V} : \emptyset$ in the word (or morpheme) in question does not fulfill that task, since this ablaut is assumed to occur not only in a really fundamental long vowel, but also (to a certain extent) through analogy, in $\bar{V} < Vh$; an alternative explanation in Szemerényi of \emptyset in contact with $\bar{V} < Vh$ is : $< \bar{v}h$ (cf. the full laryngeal theory).

In addition to an evaluation of the Hitt. \bar{h} -material which in principle corresponds to Zgusta's, two declarations by R. Jakobson are behind Szemerényi's standpoint: "The one-vowel picture of Proto-Indo-European finds no support in the recorded languages of the world" (Jakobson 1957: 23) and "views, prior or opposed to the laryngeal theory, which assign no /h/ to IE, disagree with the typological experience: as a rule, language possessing the pairs voiced—voiceless, aspirate—non-aspirate, have also a phoneme h " (Jakobson 1962: 528). Against the second of these two typological "laws" counter examples have been presented, which Szemerényi, however, considers himself able to dismiss.

1.3.2.4 *On the support or proof of the reduced laryngeal theory*

Szemerényi's h -theory is supported by the two "statistic universals", that Jakobson considers himself able to establish, and by Hitt. \bar{h} . Szemerényi has demonstrated no further application or support of his theory.

Reductions of the core of the modern "full" laryngeal theory à la Kuryłowicz and Zgusta reduce its usefulness for explaining other phenomena and on its part — if it is not, or is not entirely, a circular proof — being confirmed by this. In the case of Zgusta the consequence is simpler: there is no connection between H and vowel colour, and any argument based on such connection loses its premises. Anyone who makes use of Kuryłowicz' reduced laryngeal theory, again, must bear in mind that \bar{e} and \bar{o} only can be evidence of H . The main support for \bar{e} and $\bar{o} < eH$ is therefore an \emptyset in an established ablaut relation to them. But the possibility that the \bar{o} , \bar{e} and \bar{a} have got into an ablaut relation to \emptyset to some extent analogically is quite obvious.

1.3.3 *Disregard or denial of the modern laryngeal theory*

Without having made any exhaustive examination I assume that few Indo-Europeanists or linguists, of any type, who have dealt

with these questions, have directly denied the truth of the theory. But many linguists write and/or reason as if the laryngeal theory did not exist. For instance many scholars thus write the roots for 'stand', 'put' and 'give' as *dhē-*, *st(h)ā-*, *dō-*, and their zero grade forms *dhə-*, *st(h)ə-*, *də-*, without any explanation of whether this means that they have rejected the theory or that they believe, or "half-believe", in it but still use the old symbols, or that they use the old symbols because they have not been able to make a decision either way.

These linguists who write according to tradition find strong support in the fact that P is unaffected by the laryngeal theory at least as far as the choice of notations is concerned. In 1969:2 f. Pokorny gives reasons for this. He agrees with the scepticism expressed in Szemerényi 1955, and is of the opinion that the theory perhaps should not be rejected in its entirety, but that only a small part of it will survive (cf. Szemerényi 1967, discussed in 1.3.2.3).

Krahe (1958) leaves the theory unregarded, as "Die Laryngaltheorie kann aber weder in ihre Substanz noch in ihre Methodik als gesichert gelten" (97).

I have so far only found six linguists who have "actively" denied or thrown doubt upon the modern laryngeal theory — however, I have not searched very earnestly. They are: C. Marstrand and G. Bonfante, the former of whom loosely suggested the thought that Hitt. *h* had emerged as a hiatus-breaker, while the latter accepted and developed that theory,¹ W. Petersen, who, however, exchanged the laryngeal theory for a theory about a relationship between Pre-IE and Toch.-Hitt., in which there was no room for the Hitt. *h*,² and H. Kronasser, R. Hiersche and Satya Swarup Misra, whom I will present a little more fully.

Kronasser (1952, 1956: 76 ff., 1966: 94 ff.) does not categorically deny that the laryngeal theory may contain a grain of truth. But he considers it to be totally unproved by the Hitt. *h*, or by anything else, and he regards it as in principle a questionable thing that — as he describes the matter — it derives its origin from Möller's Semitic-IE-relationship-hypothesis and the identification therein of Saussure's *A*, *Q* with the Semitic laryngals. The theory also loses probability, according to Kronasser, by the fact that so

¹ Marstrand 1929, Bonfante 1937, 1944, 1945, 1957.

² Petersen 1932, 1933, 1934, 1939.

many and vaying effects have been ascribed to its *H*'s, while it has not been possible to point to any known languages with comparable sounds that have had a similar effect. The Hitt. (Anatolian) *h* he explains (1956) as an innovation, fortified by foreign influence: *h* is basically a hiatus-breaker (a glide), of which initial *h* before *u* properly speaking, constitutes a special case (arisen in the clause after words ending in vowels).

In his discussion (1964) of voiceless aspirates in Indo-Iranian or PIE (?) Hiersche arrives at the conclusion that the laryngealistic solution, $< k, p, t + H$, is phonetically improbable (1964: 19—34). But he is also interested in the necessary conditions for the usefulness of the theory, its truth or probability on the whole. He is very sceptical on this point and he gives the following reasons for his scepticism: (1) *H* is only a symbol for unknown sounds and therefore it only displaces the problems it is considered to solve, (2) the large number of and/or the variation in the *H*'s assumed is objectionable; the number of *H*'s depends on the remaining problems in comparative IE linguistics to be solved and on phonological-structural constructions, (3) the phonetic nature of *H* has not been possible unequivocally to decide, (4) *H* has, seen from the facts of phonetic experience, become an entirely unreasonable "joker" which may cause practically every kind of sound change, (5) the laryngeal theory usually cannot solve the problems in question without supporting constructions, the setting up of new breakneck etymologies, (6) the laryngeal theory often neglects to undertake a critical philological classification of the material.

Satya Swarup Misra (1968) is the only linguist to my knowledge, who, after a comparatively detailed discussion of the supports of the laryngeal theory, definitely rejects it, with the following drastic death sentence: "The laryngeal theory which saw its dawn in the day-dreams of some scholars in the 19th century and which has become a nightmare due to the unscientific arbitrary conjectures which the laryngalists have so emphatically hazarded, should now be dispensed with to save the IE comparative grammar from laryngeal fever which has marred its progress, since half a century" (175).

Briefly, he has drawn the conclusion that the laryngeal theory is neither necessary nor plausible nor justifiable by considerations of economy of description, in the following way:

The "proof" described as "positive" of the Hitt. *ḫ* and the Armenian *h* he considers could have been given a different (and better) explanation.

The Hitt. *ḫ* he derives from Accadian. At first *ḫ* may have been merely graphical, for instance in *aḫ*, *iḫ*, *uḫ* as a way of symbolizing *a*, *i*, *u*. But under the influence of Accadian, *ḫ* received a pronunciation when read only to be given phonetical status later and, finally, morphological status.

The cases of Armenian *h* in question he assumes to originate in *p* or *s*.

He considers none of the cardinal points of the theory to be proved, when he discusses its "indirect" supports, that is to say, the assumed advantages that comparative IE linguistics has from *H*. As the latter type of proof Satya Swarup Misra mentions (a) \bar{V} , and (b) the colour of \bar{a} , \bar{o} , a , o^2 , (c) \bar{R} , (d) aspiration $< \text{stop} + H$. Against (a) he objects that: there is no economical gain, as long vowels anyway must be assumed (i.e. as Dehnstufe) and \bar{o} already exists (i.e. apophonic *o*, \bar{o}), and the assumption " \bar{a} , *a* through *H*" (b) is contradicted by the existing ablaut $a : o$ and $a : \bar{a}$. And concerning "proof" (c) he says that $\bar{R} < R\bar{o}$ (with \bar{o} as an original vowel) is preferable, as it is then easier to understand the alternation $\bar{R} : R$, while proof (d) is dismissed with the observation that the alternations aspirates: non-aspirates, which have been considered to prove the assumption " $\text{aspirate} < \text{stop} + H$ ", may be explained as levelled "singleforms" or by the fact that the connected forms have no common starting point.

2. Discussion of Anatolian *h*

The coupling of the Hitt. (and other Anatolian) *h* with the construction *H* has without doubt given rise to the modern laryngeal theory (cf. 1.3). Views on the correspondence between *H* and *h* vary (see 1.3.1.14.3.2) but the backbone of the theory is the thought that *h* constitutes an unavoidable direct historical confirmation of *H*.

I will below attempt to answer the following question, a question that I consider to be justified: Must *h* be understood in this way? Before tackling this question I will give a brief introduction concerned the Anatolian languages and their writing, especially drawing attention to facts relevant to the discussion of *h*.

2.1 On the languages and their writing

I am no Hittitologist by profession, that is to say, I have not worked my way into Hitt. (or the other Anatolian languages) by the way of text material. I base my discussion entirely on handbooks and a good deal of other literature.

The gateway to the study of the Anatolian languages is now Kammenhuber 1963. There the author — in a way that is, as far as I can say on the basis of a superficial appraisal, extremely skillful and pedagogically commendable — gives a historical outline of research work in Hitt., Luw., (cuneiform Luw., hieroglyphic Luw.) and Pal., and sums up the situation of research, and with this starting point, presents her views on the historical type and position of the language group as an IE dialect. Among other important descriptions I especially wish to mention Friedrich 1960, Kronasser 1956, Pedersen 1938, and (for Lycian) Neuman 1963. Most of the linguistic material found is collected in a dictionary, Friedrich 1952—1966. When nothing is said to the contrary the linguistic material quoted here is taken from Friedrich

1952—1966, and the transcription is that used in this work. For the rest of the material used see the references below and list of works consulted.

Chiefly from Kammenhuber 1963 (and the views expressed there) I take the following points as the basis of my presentation:

(1) Hitt. is one of the members of the IE Anatolian group of languages. Other members of the same group are Palaic (Pal.), attested in the period c. 1650—1400 B.C., and the Luwian languages or Luwian (Luw.) in a wider sense: cuneiform Luwian. or Luw. in a more restricted sense, attested 1400—1200 B.C., Hieroglyphic Luw. (also referred to as Hieroglyphic Hitt. or “Bild-Hethitisch”), attested 1300—700 B.C., and Lycian, attested 400—300 B.C.

(2) By far the best known is Hitt. In connection with excavations beginning in 1906 in Boghazkoi in Turkey 150 kilometres east of Ankara the records of the Hittite state containing tens of thousands of clay tablets with cuneiform were found. The least well known of the Anatolian languages mentioned is Palaic. Somewhat better, but far inferior to that of Hitt., is the attestation situation of the Luwian languages. In the case of Palaic and cuneiform Luwian we have to do with cuneiform on clay tablets from the same locality as the Hitt. material. Hieroglyphic Luw. is known from hieroglyphics found in inscriptions and seal legends which, at least in the younger material, have phonetic complements (syllabic symbols and perhaps alphabetical symbols too). Lycian is attested by alphabetic writing in inscriptions.

(3) The Anatolian cuneiform emanates from an older type of the Accadian cuneiform which, on its part, originates in the Sumerian cuneiform. Cuneiform is a syllabic writing with symbols for the three types of syllable *ba*, *ab*, *bab* (which latter type, however, is more often expressed by means of a combination of *ba* and *ab*) and for the syllable type *a*. As an inevitable consequence of syllabic writing, enhanced by the aforementioned disinclination towards symbols of the type *bab*, mute vowels are found in the representation of combinations of consonants. In this fact there lies a fundamental source of uncertainty which remains permanent unless etymology or variations in writing show the way. To some extent this uncertainty is overcome by means of “Pleneschreibung”, i.e. the insertion of vowel symbols that show

that a vowel is to be pronounced in the place in question; on the other hand it is now generally considered to be uncertain whether or not "Pleneschreibung" indicates vowel length. — Concerning Anatolian cuneiform should also be mentioned that it to a large extent contains so-called ideograms, i.e. non-phonetic word symbols common to all cuneiform languages (in Anatolian etc. expressed by means of the Sumerian word in question). In addition to this so-called accadograms are found in Anatolian cuneiform, that is Accadian words or combinations of words. To the ideograms are often attached Hitt. or Accadian complements (endings or other final sounds).

I have not attempted to acquaint myself with the Hieroglyphic Luwian writing. Generally it seems to be the case — and this follows with necessity from the nature of the situation — that much is phonetically uncertain.

(4) The small amount of material from Anatolian languages other than Hitt., is a dilemma for anyone who tries to decide what existed in Proto-Anatolian and what is specific to Hitt. However, it seems possible to ascertain the main traits or main character of Proto-Anatolian (see Kammenhuber 1963:248 ff.).

In spite of the fact that Hitt., Pal., Luw. are known so early, and that a uniform Anatolian was hardly spoken later than during the 3rd millennium B.C., it represents a "Spätform" among the IE dialects. It is not an archaic "Randsprache" (as certain earlier scholars have thought) but belongs among the typologically younger "Zentralsprachen" (see Kammenhuber 1963:342 ff., especially 344). Anatolian is nearest to Celtic, Toch., and the Italian languages (observe above all the *r*-form in the medio-passive).

Thus even Proto-Anatolian differs considerably from PIE concerning noun inflection.

The three grammatical genders, the feminine, masculine, and neuter, have been reduced to two, the common and neuter gender. The triad sing., pl., dual., has met with an analogical fate, the dual. having been lost. And the developments in the direction of a removal of the difference in inflection between the sing. and pl., and towards an absence of genders that may be traced in Hitt. and Luw. (?), is by Kammenhuber (1963:254) considered to have begun already in Proto-Anatolian. Further, almost all PIE dif-

ferences in declension, depending on different noun stems, have disappeared; observe especially the coalescence of the PIE *o*-stems and the *ā*-stems. Concerning the Anatolian verb, cf. excursus of this book. It should here be repeated that it shows considerable morphological losses as compared to the PIE verb: It has no stem differences, characterizing different tenses, and only one tense for present and future time taken together and one tense for past time. The number of moods has been diminished to two, the imperative and the indicative (or better, the non-imperative). As in the noun inflection, the dual. has disappeared. On the other hand the PIE possibilities of expression in the verb have been preserved in different ways.

The comparative and the superlative are no longer expressed through suffixes, but through syntax.

Noun composition has disappeared almost entirely.

Hitt. and Luw. have a numeral of unknown origin for 'four' (*me(i)u-* and *mauḡa-*, respectively). It is therefore, though 'four' has not been attested in Pal., reasonable to assume that already Proto-Anatolian, as the only IE dialect, has exchanged a numeral under 'five'.

Already a uniform Anatolian must have had the chains of particles commencing clauses (with an ascertainably increasing development) so characteristic of Hitt., Luw. and Pal.

The vocabulary of the Anatolian languages, as it appears in the material found, seems to a large extent to contain foreign material. More than 15—20 % of the Hitt. material can not be given any plausible IE etymology (cf. Kronasser 1956:219). The greater part of the remainder is of unknown origin. Kronasser, however, warns against overestimation of the foreign strain (1956:219 f.), and probably rightly so. It is only a small part of everyday language that is met with in the texts and much of the basic vocabulary is expressed exclusively by ideograms. On the whole the situation seems to be the same in the considerably more meagre material of the Luw. languages. Of Pal. the diminutive material hardly says more than that the language has IE words as well as words of unknown origin. Chiefly on account of the unequal situation as to attestation, it is impossible to decide how much foreign linguistic material the still uniform Anatolian had.

It should, however, especially be mentioned that Hitt. *me(i)u-*, Luw. *mauḡa-* 'four' makes it probable that already uniform Ana-

tolian had taken over such a fundamental thing as a low numeral from an unknown language. (No other IE dialect has acquired a new numeral below 'five').¹ At least an indirect foreign influence is probably behind the disappearance of the old family relationship words for 'father' and 'mother' and 'brother' and it is possible that the substitutes Hitt. *atta-*, Luw. *tati-* 'father', Hitt., Pal. *anna-*, Luw. *anni-* 'mother', and the Anatolian word behind Hitt. "SES-*aš*" 'brother' are loans. — Examples of central words of unknown origin found in Hitt. and Luw. or Hieroglyphic Luw. are *irḫa-/arḫa- : arḫa-* 'row, circumference, border', *idalu- : ad-duḡali* 'evil' (how the form alternation is to be explained is uncertain), *arma- : arma-* 'moon'. A similar Hitt.-Pal. correspondence is that of *ḫaššik- : ḫaš(š)-* 'satisfy ones hunger'. Further central notations of unknown origin found only in Hitt., without synonyms in other Anatolian languages, are for instance *antuhša-* 'human being', *ḫamešḫa-* 'spring' (see 2.2.1), *ḫappira-* 'town', *ḫaršan-* 'head', *kunna-* 'right, favourable', *mehur* 'time, opportunity' (see 2.2.2), *nakki-* 'hard, weighty', *tešḫa-* 'sleep, dream' (see 2.2.2). Nothing prevents words of this kind being traced back to a uniform Anatolian.

Cuneiform (and also hieroglyphic) writing goes a long way towards explaining the morphology and syntax of these languages. But it does not suffice to give them a dependable phonology. Thus, it is not known whether there have been phonemic quantities in vowels and not with any certainty how much remains of the PIE contrast between the voiced and voiceless stops or between aspirates and non-aspirates. In spite of the uncertainty mentioned it is reasonable to assume that the PIE sound stock was considerably, or perhaps to a remarkably high degree, decimated in Anatolian.

It is possible to point to archaisms in Anatolian as compared to other IE dialects, perhaps chiefly to a well preserved and, when used in a certain way, productive *r/n*-stem-inflection, and also to the important part played by the aspects of the verb. The general impression is, however, that not only Hitt. but even a uniform

¹ The PIE etymology suggested by Heubeck (1963: 201 f.), affinity to Gr. μέιον 'less' (the basic meaning is thought to be 'small hand', i.e. without the thumb), must be considered as highly speculative and uncertain.

² Expressions with the ideogram ŠEŠ+the Hitt. complement -*aš*.

Anatolian from the point of view of development is a "Spätform" among the IE languages (see above).

There is need of an explanation of the fact that Anatolian so early withdrew so far from the proto-language. Naturally strong influence from another or other language (as substratum ?) have been reckoned with.

Caucasian languages have been discussed (see Sommer 1947: 98, Kammenhuber 1963: 258 f.) with regard to the probable route of emigration of the IE "Anatolians" and to certain peculiarities common to Anatolian and Armenian to which correspondence is found in historically known Caucasian languages (certain cases of Arm. *h* and Anatolian *ḫ* also come into the picture in this connection; cf. 2.4 and 3.2.2.10).

2.2 Etymological discussion of Anatolian linguistic material with *ḫ*

If anyone collects Anatolian linguistic material with *ḫ* that has been considered to be of PIE origin, as I have done, the result is quite an imposing amount of material.

Probably I have missed some of the material that belongs here. But I hope this will not be the case with anything that has appeared in the more central discussion and that it will not be of such extent or kind that the problem is affected in any essential way.

On studying Friedrich 1952—66 I have not found reason to increase the number of *ḫ*-words of probable PIE origin. However, little time has been devoted to this, and my ability of mustering linguistic material that might belong here without thorough examination is strongly limited.

My main sources are Friedrich 1952—66, in its capacity of a Hitt. (and Anatolian) dictionary (whose method of transcription I will follow), and on account of the etymologies and references found in it, and further, Hendriksen 1941, Sturtevant 1942 and (for later works on the subject) Lindeman 1970.

The *ḫ*-words in question are discussed, quite briefly, one by one (divided into 2.2.1 Words with *ḫ*- and 2.2.2 Words with *-ḫ*- or *-ḫḫ*-).¹ Equally briefly I will discuss (under 2.2.3) the verb suffix

¹ When nothing is said to the contrary the word or formation element is Hitt.

-*ahh*, while Anatolian verb endings with *h*, and the question of the etymology of Hitt. verb endings generally connected thereto, are given a comparatively long excursus, to which reference is made in 2.2.3.

The arrangement of the short word studies speaks for itself. Perhaps it should be mentioned that when nothing is said to the contrary the combinations of Anatolian words and words from other IE dialects, too, are evaluated on the basis of the root from which they arise (according to P). The following, fundamental attitude is the basis for my decisions:

(1) Especial care is recommendable with regard to the phonetic uncertainty that the writing (and also the situation of research) brings with it (see 2.1). The great number of words with unascertainable (and probably not IE) origin in Hitt. and Anatolian generally are other reasons for the same recommendation.

The facts mentioned means that "origin unknown" should be considered as an alternative to possible IE etymologies more often than is ordinarily the case.

(2) The more specific the situation, the greater is the probability of an etymological connection. Root etymologies are, for this reason, in principle the least reliable.

(3) The relationship between the different meanings in question is important. Have we to do with an original sense of the word or a secondary one? Is there anything that points to different original meanings in the words connected? — Cf. Couvreur's analyses (1937) with a clear understanding of the importance of the semantic facts.

(4) In the discussion of this material, the greater part of which is more or less uncertain, the necessity of being equally severe, or equally generous, in the treatment of all linguistic material deserves to be mentioned. It is not permissible — but easily done — to be (unconsciously) more rigorous regarding material that speaks against the opinion one is in beforehand inclined towards, than regarding material that speaks in favour of that opinion.

(5) When so much is ambiguous and uncertain on the morphological level, special importance should be attached to morphological obstacles against an etymology.

With or without a summary exposition of the reasons, I will class etymologies of Anatolian words with PIE linguistic material

with therms as “convincing”, or “probable”, or “uncertain”, or “very uncertain”, or “untenable”.

This (rough) classification is made on the basis of the transcribed forms. I am sufficiently acquainted with the problems of transcription to be aware that there, inter alia, may be hidden facts that might alter a decision made.

2.2.1 Words with initial *h*

hā- ‘consider to be true, believe’ : Lat. *ōmen* ‘(word constituting) presage or omen’ (Benveniste 1962:10 f.; the original meaning of the Lat. word should be ‘true statement’).

The etymology (attractive, but) uncertain: The common sound body is exceedingly small and the relation of meaning assumed is rather hypothetical (cf. Mayrhofer 1964:183).

hālzāi- ‘cry, call’, Luw. *hālt(a)-* : Goth. *laþōn* ‘invite’, *ga-laþōn* ‘call together’, ON *laða* ‘invite’ (Juret 1942:20, Puhvel 1965:88). Puhvel finds Juret’s etymology convincing when he, using Benveniste’s root theory, assumes PIE *Ael-t* : *Al-et-* behind *hālzāi-* : *laþōn*.

In spite of the fact that, irrespective of how it should be explained, there seem to exist examples of root variants of the type dicussed here (see 3.2.1.2), the etymology is most hypothetical, almost unacceptable.

hamešha- ‘spring’ : Gr. ἀμάω (aorist ἤμῃσα) ‘reaps’, OE *māwan* ‘ripen’ (Sturtevant 1942:40, 49), or OHG *amar(o)*, German *Emmer* ‘spelt’ (Čop 1957—56:140).

Sturtevant’s etymology is, from a morphological point of view, based only on an *m* that the Hitt. and the Gr. words have in common (Gr. ἀμ- < ἥ!). To this comes an uncertainty from a semantic point of view. The connection with the German word, again, is nothing but a wild guess.

hanna- ‘decide, judge’, Lycian *qan-* : Gr. γινώσκω (Pedersen 1938:201) or Lat. *ā* (Sturtevant 1942:52); in Hitt. *hanna-* (and *hašduir-*) we should, according to Sturtevant, have to do with a verbal prefix.

Unacceptable etymologies: the premises for Pedersen’s *h* < *gj* (and *kj*), are probably unverified and Sturtevant’s explanation may be dismissed without comments.

ḡanna- 'grandmother', Lycian *Xñna* 'mother' (?): Lat. *anus* 'old', Gr. ἀννίς 'grandmother', OHG *ana* 'grandmother', Armenian *han* 'grandmother' (Sturtevant 1942: 40, Hendriksen 1941: 28, etc.).

Uncertain etymology: There is some connection between at least some part of the material. But the fact that these words were probably originally "Lallwörter" calls for caution. — Observe also the occurrence of Hitt. *anna-*, Luw. *anni-* 'mother'.

ḡant- 'front', *ḡanti* 'especially, separate', *ḡantezziḡa-* 'front, first, noble' (Lycian *Xñtawata* 'leader'): Gr. ἀντί, Lat. *ante*, *anterior* (as early as Kuryłowicz 1927: 101).

Convincing etymology.

ḡap(a?)- 'river': Skt, Avestan *āp-* 'water', Prussian *ape* 'well' (Friedrich 1961).

Convincing etymology.

ḡappin(a?)- 'rich', *ḡappinant-* 'rich', *ḡappinaḡḡ-* 'make rich', Luw. *ḡappina-* 'rich': Lat. *opus*, *ops*, Skt *āpnaḡ* (Laroche 1950: 41 f.).

Probable etymology.

ḡara(n)- 'eagle', Hieroglyphic Luw. *ḡara-*, *ara*: OHG *aro*, Gr. ὄρνις (Sturtevant 1942: 57 etc.).

Convincing etymology.

ḡar(k)- 'hold, have': Gr. ἀρξέω 'keeps away from protects', Lat. *arcēre* 'shut in, shut out, hinder', OHG *rigil* 'bolt', Armenian *argel* 'obstacle' (Götze—Pedersen 1934: 50 f. etc.).

Probable etymology.

ḡark- 'perish' (to which the causative *ḡarganu-* 'destroy'): OIr. *orcaid*, 'destroys, hills' (Cuny 1934: 205, Couvreur 1937: 141 etc.).

Uncertain etymology. The Celtic word (like the Armenian *hark-anem* 'hews') may be traced back to a PIE root *perg-* 'strike' found in P 819).

ḡarki- 'white, light': Gr. ἀργής 'white, light, shining', Toch. A *ārki*, B *ārkwī* 'white', Lat. *argentum* (as early as Kuryłowicz 1927: 101).

Convincing etymology.

ḡarp- 'separate or discern etc.': Lat. *orbis* 'deprived of something', Skt *ārbha-* 'feeble, weak', OIr. *orb(b)e* 'inheritance', Goth. *arbi* 'inheritance' (Benveniste 1962: 11 f.).

Very uncertain etymology: *harp-* looks like a derivation of the noun Lat. *orbis* etc., but its meaning would have been more fitting as a root meaning.

harrā- 'tear, break' and *harš-* 'break ground' : Gr. ἀρόω, Lat. *arāre* 'plough' (Sturtevant 1942:41, Lehmann 1952:25).

Uncertain etymology: Only the *r* corresponds unequivocally to the Lat. *r*, Gr. ρ. *-a-* in *harrā-*, *harš-* may originate in PIE *o* or *a*. The meaning of *harš-* and Gr. ἀρόω, Lat. *arāre* go well together. But the *š* in *harš-* is an element of uncertainty. It is not certain that *harrā-* and *harš-* belong together and if not the Gr. and Lat. verbs should only be combined with *harrā-*, which has a meaning which can, but need not, constitute the origin of 'plough'.

hartagga- of a certain beast of prey (bear has been guessed) : Gr. ἄρκτος, Skt *ṛkṣa-*, Armenian *arj*, Lat. *ursus*, all 'bear' (Friedrich 1952—54).

Unacceptable etymology: Evidently it is not known if the meaning of *hartagga-* is 'bear'. Further, the Hitt. word lacks the PIE *k̂* that is reflected in ἄρκτος, *ṛkṣa-*, *arj* and it has an *-agga* without any corresponding part in the words compared to it.

hašduir 'twigs': Gr. ὄζος, Goth. *asts*, Armenian *ost*, all 'twig' (Sturtevant 1942:52 etc.).

Uncertain etymology: 'brushwood' and 'twig' (in ὄζος etc. < ('what you sit on') is not the same thing and the final *-uir* is a problem.

hašša- 'hearth', Luw. *haššanitti* 'hearth' (?): Lat. *āra*, Oscan *aasai* (loc.) (Pedersen 1938:27, 164 etc.).

Convincing etymology.

haštāi- 'vertebræ, bones', Luw. *hašša-* : Gr. ὀστέον 'bone', Skt *asthi* 'bone' (Sturtevant 1942:57, Hendriksen 1941:28 etc.).

Convincing etymology.

haster(tš?) 'star' (Otten—Soden 1968:40, 41 and literature cited there) : Gr. ἀστήρ, Arm. *astl*, Goth. *stairno* (Otten—Soden 1968:40, 41 and literature cited there).

Attractive etymology but observe also the occurrence of Acc. *Istar* 'star'.

ḡat- 'dry (up)' : Gr. ἄζω 'dries' < PIE *ad-īo* (Benveniste 1954:39).

Quite probable etymology.

ḡatk- 'close (door)' : Skt *átka-* 'cloak' (Benveniste 1935:156, Sturtevant 1942:57).

Unsatisfactory etymology: 'close' and 'cloak' are perhaps not incompatible but far from closely related concepts.

ḡattāi- 'stab, cut (off), hew, beat down': Arm. *hatanem* 'hews' (Sturtevant 1942:30).

Attractive etymology. But it is far from certain that we have to do with an IE word. Shared loan from non-IE languages?

Luw. *ḡaḡi-*, hieroglyphic Luw. *ḡaḡa-*, Lycian *Xawa*, all 'sheep': Lat. *ovis*, Gr. ὄϊς, Skt *ávi-* (Laroche 1968:60, etc.).

Convincing etymology.

ḡekur 'rock, pinnacle of rock' : Gr. ὄρεϊς, ἄκρος, Skt *ágra-* 'peak' (?) (Pedersen 1938:183 etc.).

Very uncertain etymology chiefly on account of the vocalism (Hitt. *e-* : Gr. *o-*, *α-*).

ḡenkan 'pestilence, death' (on the meaning, see penetrating analysis in Couvreur 1937:124 ff.).

The etymologies given may be presented in the following way.

(1) The Hitt. word has been connected with material which, according to P 45, contains PIE *ank-* 'compulsion, necessity' (Gr. ἀνάγκη, OIr. *écen*, Welsh *anghen*, *angen*, Cornish *anken*) or with material which, according to P 762, contains the zero stage (*ḡk-*) of *neḡ-* 'kill, death' (OIr. *ēc*, Breton *ankou*, Welsh *angu*) or with both (because a PIE sequence *ank-* is assumed where *P* sees *ḡk-* or because *P*'s *ank-* and *neḡ-* are interpreted as base I and base II, according to Benveniste's root theory, of a root *Hen-* with the suffix **-ek*); see Kuryłowicz 1927:101, Pedersen 1938:184, Benveniste 1935:155, Sturtevant 1942:49.

(2) According to Couvreur 1937:122 ff. (with the reasons of the author in 133 ff.) *ḡenkan* is derived most probably < **hainkan* from **aig-* in Lat. *ager* 'depressed, not thriving, ill', ON *eikinn* 'wild, furious', OE *ācol* 'agitated, dismayed', Toch. B *aik(a)re*, A *ekro* 'ill', with a nasal insertion which has otherwise only been

found in the ablaut-related *ing-* in, inter alia, Latvian *īgstu*, *īgt* 'feel inwardly pain, be cross or annoyed', OCS *jędza* 'illness'.

None of these etymologies deserves any credit worth mentioning. As regards that of Couvreur, I should like to point out in the first place that the core of the range of meaning of PIE *aig-/ing-* — about 'out of form' or 'suffering' — is far from 'pestilence, death' (*henkan*). Concerning the etymologies under (1) should first be stated that there is from a morphological point of view no reason to see a connection between 'compulsion, necessity' and 'death'. In so far as the existing words can be traced back to an *ṛk-*, the meaning should decide the choice between the roots *ank-* and *nek-*.

Furthermore, *henkan* can not on account of its meaning be derived from *ank-* 'necessity, fate'. — On the other hand the possibility that the word is remotely related to Lat. *necāre* etc. should not be precluded. (This assumption does not, however, mean that I am considering whether to apply the laryngeal theory in its extreme form "all *V*-s — once *HV-*", and Benveniste's root theory). But it is only an uncertain possibility.

hink- 'nod, bow, show reverence' : Gr. ῥυκος 'bend', Lat. *uncus* 'hook, bent', Gr. ἄγκών, 'elbow, bow' etc. from *ank-*, *ang-* 'bend' in P 45 (Hendriksen 1941:28).

Very uncertain etymology: Merely possible (not convincing) semantically and highly dubious on account of the vocalism; in spite of a certain wavering in Hitt. between *e* and *i* in writing and a few assumed cases of correspondence Hitt. *e* : PIE *o* or *a*¹ (in other dialects) the etymology *hink-* : ῥυκος etc. is very bold.

hink- 'present, deliver, offer, allot to, ascribe to' : related to *henkan* and, further, to gr. ἀνάγκη etc. (Sommer—Ehelof 1924:27).

Untenable etymology: See, in the first place, the comments under *henkan*. And further: If this *hink-* should be identical with *hink-* 'nod' (which is assumed in Götze—Pedersen 1934: 37, 51) its PIE origin is still uncertain (se under *hink-* 'nod').

hišša- 'pole (of a vehicle)' : Skt *īṣā* 'pole (of a vehicle)' (Sommer 1949:161, Kronasser 1956:224, Mayrhofer 1956 under *īṣā*, Benveniste 1962:13 f., etc.).

¹ Of which at least *nekumant-* 'naked, stripped' : German *nacht*, Lat. *nudus* seems convincing.

The connection is convincing. But have we to do with an inherited Anatolian word or with a loan word from Skt? (Kronasser and Mayrhofer interpret *hišša-* in the latter way, while Benveniste sees it as an inherited word).

ḫuḫḫa- 'grandfather', Lycian *Xuga* : Lat. *avus* 'grandfather, ancestor', Arm. *hav* 'grandfather', ON *afi* 'grandfather', Lith. *avýnas* 'uncle', OCS *ujъ* 'uncle' (Kuryłowicz 1935: 74, etc.).

Very uncertain etymology: *ḫuḫḫa-* and Lat. *avus* etc., have the diminutive common denominator *u/ū*. *ḫuḫḫa* is rather an "Alt-kleinasiatishes Lallwort" (this is the alternative explanation in Friedrich 1952). Observe that "Lallwörter" of at least partly probable non-IE origin have throughout replaced the old family-relationship words in Hitt. (Anatolian) (see 2.1).

ḫulāli- 'bind', from which probably *ḫulaliḫa-* 'wrap' : Skt. *वृणोति* 'covers', Gr. *εἰλώ* 'enfolds, wraps, covers', Lat. *volvere* 'roll, roll up, turn' (Sturtevant 1942: 49).

Uncertain etymology: The uncertainty lies (above all) on the morphological level.

ḫulana-, *ḫuliḫa-* 'wool', Luw. *ḫulani-* : Lat. *lāna*, Skt. *ऊर्णा*, Gr. *λίνος* (PIE *u^l-nā*, ? *u^l-no-*), all 'wool' (Friedrich 1952 etc.), or Lat. *vellus* (PIE *uel-no-*) (Lindeman 1970: 56).

Probable etymology. A certain source of insecurity lies in the occurrence of the variety *ḫuliḫa-*, however.

ḫullāi- 'fight, contest, abolish (prescription)', *arḫa ḫullāi-* 'reject' : (1) Gr. *ᾄλλῶμι* 'destroys', *ᾄλεθρος* 'destruction', Lat. *olēre* in *abolēre* 'devastate' (Couvreur 1937: 143), (2) Lat. *vellere* 'snatch, tear, pluck', *vulnus* 'wound', ON *valr* 'men killed, fallen in battle', Gr. *ἀλίσκομαι* 'is captured or conquered', aor. *ἔάλων* (Sturtevant 1942: 38; see also P 1144 f.), (3) Gr. *βάλλω* 'throws, hits' (Hendriksen 1941: 27).

The etymologies (1) and (3) fall on account of the fact that PIE *o* gives Anatolian *a*, and that there (probably) is no support for the assumed development PIE *g^u* → Anatolian *ḫ*. The etymology (2) which (following P 1144) traces back the Hitt. word to a root *uel-* 'snatch, rob, wound' (from which arises 'death, massacre, (men fallen in) battle') may semantically as well as morphologically be judged barely possible, and therefore uncertain.

humant- 'every, whole, all' : Lat. *omnis* (Couvreur 1937:144).

Unacceptable etymology: PIE *o* > Hitt. *u* has not been proved.

hurnāi- 'sprinkle' : Skt *vāri* 'water', Avestan *vairi-* 'lake', *vār* 'water, rain', Toch. A *vār* 'water', Gr. *οὔρον*, Lat. *ūrīna* 'urine', OE *wær* 'the sea' (Sturtevant 1942:41).

Very uncertain etymology: Observe chiefly that 'water' or 'moisture' is not in the least a necessary origin for 'sprinkle'; cf. Swedish *dänka* 'sprinkle', which is probably related to *dänga* 'hit', and *stänka* 'make something fly about', a causative to *stinka* 'stink'.

hurpašta(n)- 'leaf (of a tree), peel (or skin)' : Lat. *verbēna* '(holy) herb', especially in the pl.: 'herbs or tender twigs (used at sacrifices etc.)', < PIE *uerbes-nā*, from a labial enlargement (inter alia also in Lat. *verbera* 'twigs, stroke with a birch', Lith. *virbas* 'brushwood' and Goth. *waírpan* 'throw') of the in P 1152 given root *uer-* 'turn, bend' (Neumann 1961:79).

Very uncertain etymology: 'Something pliant' is only one of many possible original meanings of the Hitt. word, and hardly the one that a priori lies closest to hand ('something thin', for example, is at least as probable). And the relative, but not complete, morphological similarity can not be considered sufficient to make the etymology probable.

huyāi-/hūīa- 'run, flee, spread (of vegetation)', Luw. *hui/hūīa-*, hieroglyphic Luw. *huahua-* : (1) Gr. *ἔβη*, Skt *ágāt*, aor. to PIE *gʷā-* 'go' (Hendriksen 1941:27), (2) Skt *vāti*, Gr. *ἄησι* 'blows' (Kammenhuber 1961:67), cf. under *huyant-*, (3) Gr. *ἵεμαι* 'moves forward, hurries, strives for, covets' (Couvreur 1937:119 f.).

The etymology (1) is morphologically untenable (cf. under *hullāi-*). The etymology (2) is extremely uncertain on account of the semantic contrast 'run, flee' : 'blow'. The etymology (3) is perhaps the best one, but it, too, is considerably uncertain: This is the case concerning the root "*uei-, ueia-* 'auf etwas losgehen', einerseits 'gehen, gerade Richtung nehmen; Weig, Reihe', andererseits 'worauf losgehen, es erstreben, erjagen, ersehnen, wollen'" (P 1123). I consider Hitt. *huyāi-* etc. to be only uncertainly belonging here chiefly on account of the fact that it has no traces of the evidently original and central meaning of the root "*uei-, ueia-*".

ḫuḫant- 'wind' : Lat. *ventus*, Goth. *winds*, Skt *vāti*, Gr. ἄησι 'blows' (Kuryłowicz 1935: 74, etc.).

The etymology is probable, although there can be no full identity between Hitt. *ḫuḫant-* (*nt*-stem) and Lat. *ventus* etc. (*o*-stem) and the vocalism (Hitt. *a* for PIE *ē* or *e*) is a source of uncertainty.

ḫuek-/ḫuk- 'confirm (by oath)' : (1) Skt *vivakti* 'speaks', *vācaḥ* 'word, speech', Lat. *vox* 'voice', Gr. ἔπος, Armenian *gočem* 'cries, calls' (Sturtevant 1933: 80), (2) *vovēre* 'praise, speak solemnly, laud' (Schmitt-Brandt 1967: 87).

Both etymologies seem untenable on account of the fact that Hitt. *u* is expected as a trace of a labiovelar (see Hendriksen 1941: 28 f.).

ḫuiš- 'live, remain alive', *ḫuišu-* 'alive, raw (of meat), fresh' : Skt *vāsati* 'stays, lives, spends the night', Gr. ἄεσα (νύκτα) 'spent (the night)', Goth. *wisan* 'be, become', ON *vist*, OE, OHG *wist* 'existence, haunt, dwellingplace' (Kuryłowicz 1927: 101, Sturtevant 1933: 54, 89, Couvreur 1937: 120 ff., etc.).

The etymology, which seems to be generally accepted, has a drawback to it that has not been observed. The meaning of the root behind Skt *vāsati* etc., *ues-* (see P 1170 f.), is for the rest (summarily given) 'dwell' and 'exist' which without difficulty may be derived from 'dwell', never 'remain alive'. In Hitt. *ḫuiš-* and *ḫuišu-*, on the other hand, only 'remain alive' and 'alive, fresh' (perhaps < 'that thrives and grows'), respectively, are found. It is true that 'dwell' and 'remain alive' are concepts that are easily associated to one another, and there are some examples (among others Lat. *vivere*) of the same verb having both meanings, but it seems to be the rule that the concepts have different expressions.¹ — I therefore judge the connection Hitt. *ḫuiš-* : Skt *vāsati* etc. as uncertain.

2.2.2 Words with -h(h)-

eḫurati- "Propf (aus Wolle, im Ohr)" (Friedrich 1952—54), "ear-stopper" (Sturtevant 1942: 47) : from *ehur+ati*, where the first member is connected to Gr. ὤς (Doric), οὔς (Attic), Lat. *auris*,

¹ See Buck 1949: 285 f., 455 ff.

Goth. *ausō*, Lith. *ausis* (< *aus-*), and Avestan dual. *uši* 'ears, sense' (< *us-*) (Sturtevant 1942:47). — From *ehurati-* (irrespective of its etymology) *ehuradāi-* "verstopfen" (Friedrich 1952—54), "stop (one's ear)" (Sturtevant 1942:47) is formed.

Untenable etymology: *ehurati-* need not contain any word for 'ear'. The meaning 'stopper' is sufficient, as the concept 'ear' in the two instances given of *ehurati-* and its derivation *ehuradāi-* is expressed by a special word (ideogram). And the explanation given of *-ati-* is not convincing ("its final member may be connected with OE *edor*, *eodor* 'fence, roof' (IE *edh-*)" Sturtevant 1942:47), which means that the segmentation *ehur-ati-* is by no means inevitable. Finally, the connection *ehur-* : *ōs* etc. is, with regard to the vocalism, problematic even for most laryngealists (see under *sehur*).

ešhar, *eššar* 'blood', *r/n*-stem (gen. *ešnaš*, *ešhanaš*, dat *ešhani*, abl. *ešhanats*, *ešnatš*), cf. *ešhanuuant-*, Luw. *ašhanuuant-* 'blood-stained' : Skt *ásrk*, gen. *asnáh*, Gr. *ἔαρ*, *ἔϊαρ*, *ἦρ*, OLat. *aser*, *assyr*, Toch. A *ysār* (Sturtevant 1933:62, 88, Hendriksen 1941:29, Couvreur 1937:49 f., 101, 167—170).

Convincing etymology.

hamešha-, see 2.2.1

irha-, *arha-* 'border, circumference, row', hieroglyphic Luw. *arha-* 'border' : Lat. *ōra* 'verge, bed, border', Skt *ārāt* 'from afar, far', *ārē* 'far' (Sturtevant 1942:48).

Very uncertain etymology (chiefly) on account of the vocalism.¹ *išha-* 'master' : Lat. *erus* 'master', fem. *era*, OLat. ? *esa* (Sturtevant 1942:57).

Very uncertain etymology: *išha-* should rather be connected with Arm. *isXal* 'rule', *isXan* 'master'. Hitt. (or Anatolian) and Arm. loans from the same language? (cf. 2.4). — Observe, concerning Lat. *erus*, that its original form with *s* is not certainly attested (see Ernout—Meillet 1951).

išhāi-/išhiḡa- 'bind', Luw. *hišhiḡa-* : (1) Skt *syāti*, aor. *asāt*, Avestan *hā(y)-*, part. *hita-* (Kuryłowicz 1927:101, 1935:74, Pedersen 1938:

¹ This judgment — like all other etymological decisions in this survey of the Anatolian linguistic material concerned — is made without regard to the laryngeal theory. Sturtevant experiments with a metathesized *o*-colouring *H*, which should awaken misgivings even by a laryngealist.

114, Hendriksen 1941:29 etc.), (2) Avestan *yāsta-* 'girded', Gr. ἰώννυμι 'girds' (Sturtevant 1942:51).

The etymology (2) is untenable: Irrespective of the fact that it is rather doubtful in semantic respects ('gird' and 'bind' are rather different things), the connection of *išhāi-* etc. with Avestan *yāsta-* etc., which according to P 513 originates in *īō(u)s-* (in ablaut relation to *īūs-* in Lith. *pajūšėti* 'gird') is very bold. An *ō(u)* ought not to disappear entirely (and Sturtevant's view that the *h* in *išhāi-* etc. is a trace of it ought to alarm even a laryngealist, as it encumbers the laryngeal theory with the assumption of laryngeal metathesis).

The etymology (1) is comparatively attractive: From a semantic point of view it meets with no obstacles. If the *i* in Hitt. *išh-* is interpreted as a prothetic vowel and *hi* in Luw. *hišhiḫa-* is seen as secondary¹ — as there seems reasons to do (see Benveniste 1954:39) — the etymology becomes tolerable also from a morphological point of view. That the Anatolian verb is connected with Skt *syāti* etc. is considerably supported by the fact that known enlargements with an *m*-formant to the verb root in question have counterparts in Hitt. : *išhimana-* 'string, rope' may be connected to Skt *sīmán-* 'hair parting', ON *sími* 'rope, string', OE *sīma* 'band, fetter'.

išhamāi- 'sing, song', *išhamatalla-* 'singer' : Skt *sāman-* 'song', Gr. οἶμος 'song, tune' (Benveniste 1954:39 f.).

Probable etymology: On the possibility of interpreting *i* as a prothetic vowel and on one probable and one possible parallel to the correspondence Anatolian *šh-* : other IE dialects *s-*, see under *išhāi-* and *išhunau-*.

išhunau- 'sinew, bowstring, over-arm (?)' : Skt *snāvan-* 'ribbon, sinew', Gr. νεῦρον 'sinew', Toch. B *šñaura* 'sinews, nerves' (Laroche 1962:30 f.).

Somewhat uncertain etymology: It seems convincing with regard to the fact that a sense as specific as 'sinew' is found on both sides. And it seems possible that the correspondence Hitt. *išh-* : Skt etc. *s-* may have parallels: cf. above under *išhāi-*, *išhamāi-*. A source of uncertainty lies in the fact that the Hitt. word must

¹ Probably a prothetic *i* in Luw. has been added to *h* or possibly an initial *ši* has been avoided by the addition of *i* in Hitt. and *hi* in Luw. It seems considerably more farfetched to explain *hišhiḫa-* as a reduplicated present of the type Skt *tiṣṭhati*, with Crossland 1951:100 (note 1).

be assumed to be a transformed *r/n*-stem, which inflection category has been well preserved and even productive in Hitt. (see Kammenhuber 1963:137, 185 ff., 198).

laḥḥa- 'campaign' : Gr. *λαός* 'people, population, troops' (Sturtevant 1942:35).

Very uncertain etymology (cf. Frisk 1970 (under *λαός*)): The different meanings 'campaign' and 'people' (of which 'troops' is naturally seen as a specialization) cause uncertainty.

lah(h)uuāi- 'pour' : Gr. *λούω*, Homeric *λο(F)έω* 'washes', Mycenaean *rewotorokowo* 'bath-pourers', *rewoterejo* 'for bathing'¹, Lat. *lavere* 'wash (oneself), bathe', *alluvies* 'pool of water occasioned by the overflowing of the sea or the river', *diluvies* 'inundation, flood, deluge', Armenian *loganam* 'bathes', Gaulish *lautro* 'bath', OIr. *lōathar*, *lōthar* 'basin, channel', Irish *lō-chasair* 'rain', Breton *ludu* 'ashes (used for washing)', ON *lauðr* 'lye, (soap)lather', ON *laug* 'bathwater', OHG *luhen* 'wash' (Sturtevant 1933:138, 1942:62, Couvreur 1937:189 ff., Hendriksen 1941:31 ff. etc.).

Very uncertain etymology (cf. Friedrich 1952—1966, Winter 1965¹:108): The senses 'pour' (cf. the Hitt. word) and 'wash' or 'flood' (of or behind Gr. *λούω* etc.) may have developed from a common original sense, but we have no evidence that this is the case. Morphologically there is uncertainty. The Mycenaean instances may indicate that the original form of the root was *leuə-* (cf. Cowgill 1965:159), and this does not agree well with *a* in *lah(h)uuāi-*.²

maḥḥan 'as, when' : (1) Properly speaking a noun formation to the root *mē-* in Skt *māti* 'measures', etc. (Götze—Pedersen 1934:58 f.), (2) relationship to Hitt. *man* 'when' and Gr. *μήν* (Doric, Aeolic *μάν*) 'truly, surely, indeed' (Sturtevant 1942:39).

Exceedingly improbable or untenable etymologies: The judgment calls for no reasons.

maḥla- 'grape-vine' : Gr. *μήλον* 'apple' (Kuryłowicz 1927:102, 1935:73).

¹ See Cowgill 1965:158.

² Concerning the derivations of PIE long diphthongs see the historical outline in Schmitt-Brandt 1967:32 ff.

The etymology is very uncertain or untenable: It is based on an older and obviously erroneous view that the Hitt. word has the meaning 'apple' (see Friedrich 1952—54).

mehur 'time, occasion': Skt *māti* 'measures', Lat. *mētiōr* 'measures', Goth. *mēl*, ON *mál* 'measure, time', Lith. *mėtas* 'year, time, measure' (Sturtevant 1933:110, 1942:47, Hendriksen 1941:31, Puhvel 1965:89, Szemerényi 1967:91, etc.).

Very uncertain etymology: We clearly have to do with a root etymology that from a semantic point of view has the weakness that the assumed formation to the root of '(to) measure' does not have the sense '(a) measure', or the like (cf. Couvreur 1937:203 f., Lindeman 1970:53).

naḥḥ- 'be afraid or careful, show reverence', *naḥšaratt-* 'fear, reverence', *naḥšarnu-* (with the causative *-nu-*) 'frighten, scare', *naḥšariia-* 'be afraid': OIr. *nār* 'modest, ashamed', *ná(i)re* 'shame' (Götze—Pedersen 1934:61, Couvreur 1937:183 f., Hendriksen 1941:31, Sturtevant 1942:36, Vendryes 1960 etc.).

Somewhat uncertain etymology: The uncertainty is occasioned partly by the fact that the meanings of the Hitt. and OIr. material are quite easy to combine, but nevertheless not necessarily related, partly by the fact that the derivation of OIr. *nār*, *ná(i)re* < **nā-sr-* is only a hypothesis. On the other hand the etymology is worth attention. It is quite possible to see Hitt. *naḥḥ-* as the unenlarged root behind OIr. *nār*, *ná(i)re* and to see Hitt. *naḥšar-* as the same enlargement of this root as in the OIr. words.

paḥš- 'protect, preserve', *pahšanu-* (with the causative *-nu-*) 'secure, protect, fortify, preserve': (Skt *pāti*, Av. *pāiti*, both 'guards, watches, protects' and) Lat. *pāscere* (*pāvi*, *pāstum*) 'let graze, feed', *pāstor* 'shepherd', *pābulum* 'fodder', Toch. A *pās-*, B *pāsk-* 'guard' (Kuryłowicz 1927:102, 1935:73, Couvreur 1937:184 f., Hendriksen 1941:31, Sturtevant 1942:36, etc.).

Probable etymology if it is interpreted as: Hitt. *paḥs-* to either of the roots *pā-* (see P 787) and *pō(i)-* (see P 839), which are related as to meaning and partly difficult to distinguish between. It goes best with the latter (as this is understood in P). A source of some uncertainty is the *š* in the Hitt. verb without correspondence to other formations of the root *pō(i)-* or the root *pā-*.

paḥhur, *paḥḥuḥar* (gen. *paḥḥuēnas*, dat. *paḥḥuēni*), Luw. *paḥur* 'fire': Gr. *πῦρ* (gen. *πυρός*), ON *fúrr*, *fýrr*, Umbrian *pir*, Arm. *hur*, OS, OHG, OFris. *fiur*, Toch A *por*, B *puwār*, *pwār*, Goth. *fōn* (gen. *funins*) (Kuryłowicz 1927:102, 1935:73, Couvreur 1937:185 ff., Hendriksen 1941:31, Sturtevant 1942:36 f., etc.).

Convincing etymology: It is beyond doubt that Anatolian shows the ancient *r/n*-stem in the PIE word. I am not ready to decide how in detail the varying forms in which the word is found in the IE dialects are to be interpreted; for the discussion on the subject, see among others Couvreur 1937:185 ff., Winter 1965²:192 f. However, I wish to point out, on the basis of the discussion pursued, that the form with *ū* (Gr. *πῦρ* etc.) and the Goth. *fōn* indicate a full grade form with PIE *pāu-* (or *pōu-*) which probably also is what is found in the Anatolian word.

palḥi- 'broad' (from which *palḥašti*, *palḥatar*, *palḥeššar*, all 'breadth'): linguistic material which, according to P 805 f. and (concerning Skt *pr̥thú-*) P 833, is traceable to the root *pelə-*, *plā-* 'broad and flat, spread out', Lat. *plānus* 'flat', Lith. *plónas* 'thin', gr. *πέλανος* 'a flate cake or coin', Lat. *palam* 'open, public', Gr. *παλάμη* 'palm', Lat. *palma* 'palm', Skt *pr̥thú-* 'wide, broad, spacious', Gr. *πλατύς* 'flat, broad' (Kuryłowicz 1935:73, Couvreur 1937:215 ff., Sturtevant 1933:106 f., 1942:42, Hendriksen 1941:29, Lindeman 1970:77, etc.).

Reasonable etymology.

parḥ- 'drive, chase, attack', Luw. *para-* 'drive': (1) Gr. *φέρω*, Lat. *ferre*, Goth. *baíran*, all 'carry' (Pedersen 1938:185), (2) Gr. *περάω* 'passes right across or through a place, pierces', *πέρονμι* 'exports for sale, sells', Goth. *faran* 'travel' (Sturtevant 1942:37).

Uncertain etymologies: The uncertainty lies on the semantic level. — I find it somewhat more certain that Hitt. *parḥ-* is related to Arm. *hari* 'struck', Lith. *periù*, *peṛti* 'strike, flog', OCS *perq*, *p̣rati* 'strike', but this etymology, too, must be considered to be uncertain.

šanḥ- 'seek, search; sweep, cleanse': Skt *sanóti* 'gains, obtains, procures', *sánitar-* 'conqueror', part. *sātá-*, Avestan *han-* 'gain, obtain', Gr. *ἀνύω* 'effects, accomplishes, makes an end of, finishes, gets, obtains' (Kuryłowicz 1927:102, 1935:73, Couvreur 1937:218, Lindeman 1970:44 f., etc.).

Uncertain etymology: The uncertainty lies on the semantic level. The meaning 'seek' of the Hitt. verb, which is the one of its meanings that is closest to that of Skt *sanóti* etc., should in reason be developed from 'search', which on its part — if *šanḫ-* 'seek, search' and *šanḫ-* 'sweep, cleanse' are not different words or the latter use does not depend on a semantic loan — ought to emanate from 'travel across or through' or the like.

šeḫur- 'urine': (1) (Lat. *sēmen* 'seed', *sēvi* 'has sown' and) ON *saurr* 'dirt, mud, sludge, sperm', *súrr* 'wet, sour', OCS *syrb* 'moisture' (Sturtevant 1942:47, Hendriksen 1941:32, Puhvel 1965:89 etc.), (2) OCS *svčq*, *svcati* 'make water', *svci* 'urine', Lat. *siat* 'makes water', OHG *seihhen*, German *seichen* 'make water', *seiche* 'urine' (Friedrich 1952—54), with "?", Kluge 1967 under *seichen*).

The etymology (2) is untenable: It assumes a correspondence between Skt *k^u* (in the root *seik^u*- behind OHG *seihhen* etc.) and Hitt. *ḫ*, which does not seem justified. The etymology (1) is very uncertain: The meanings 'urine' and 'sour, mud' and the like may be combined but are far from necessarily signs of etymological relationship. The vocalism, too, shows uncertainty. It is true that it is a permissible assumption that Hitt. *šeḫur* contains an *e*-stage, ON *saurr* an *o*-stage of the root in question, but this increases the possibility that we have to do with unrelated words. Observe in this connection that Lat. *sēmen*, *sēvi*, which, if they belonged here, would show an *e*-stage even outside the Anatolian, and, by the vowel length, justify the *ḫ* in Hitt. *šeḫur* to the laryngealists, obviously does not belong with ON *saurr* etc. For criticism of etymology (1) cf. Couvreur 1937:240, Lindeman 1970:53 f.

tarḫ- 'defeat, be powerful, be able', *tarḫuilatar* 'generative power, power': (1) Skt *táratī*, *tiráti* 'crosses over, passes over, overcomes, surpasses', *túrvati* 'overwhelms', *tará-* 'strong', Gr. *τῤῥᾶνής* 'piercing, clear, distinct', Lat. *intrāre* 'enter' (Kuryłowicz 1927:102, Sturtevant 1942:37, Lindeman 1970:44, note 22, 56 etc.), (2) from a root *dher-* 'hold, support' in, inter alia, Gr. *θῤῥᾶνος* 'bench, stool' with an *s*-enlargement in, inter alia, Gr. *θῤῥᾶσός* 'bild, rasch' (Couvreur 1937:218 ff.).

Etymology (2) is untenable. It may be dismissed as a rather arbitrary root etymology. The etymology (1) is somewhat uncertain: Morphologically it may be regarded as tolerable. But from a semantic point of view it is more uncertain. This in spite

of the fact that 'defeat or overwhelm' is found in Hitt. *tarḫ-* as well as in the linguistic material compared to it, and 'strong' in Skt *tará-* may be related to 'be powerful' (in the Hitt. verb). For 'be powerful' may still be the original meaning of *tarḫ-*, since this has not been found used in a manner indicating movement, corresponding to the original meaning in Skt *táratī* etc.

tuhḫāi-, *tuhḫima-*, *tuhḫiatt*, *tuhḫuuāi*

(a) *tuhḫāi-* 'suffer (from travail)', *tuhḫima-* 'the suffering (from travail); oppression or anxiety', *tuhḫiatt-* 'being crushed to death or suffocated or the like' (see also Laroche 1956: 75 f.).

(b) *tuhḫuuāi-/tuhḫui-* 'smoke' and 'closeness or fume (?)', *tuhḫeššar* 'resin for incense'.

Laroche sees (1956: 75 f., 80) identity between *tuhḫima-* and Skt *dhūmá-* 'smoke', Lat. *fūmus* 'smoke', Gr. *θυμός* 'breath, life, soul, spirit' (observe also, however, the meaning of the derivation *θυμιάω* 'smokes'). But *-ma* seems to be a productive (deverbative) word formation element in Hitt. (see Laroche 1956: 76 ff.) and *tuhḫima-* is in the first place a Hitt. (or Proto-Anatolian) derivation of the verb *tuhḫāi-*. The relationship of this verb to Skt *dhūmá-* etc. may be regarded as extremely uncertain on account of the difference of meaning. On the other hand a connection of *tuhḫuuāi-* etc. (see b) with Gr. *θύω* 'performs (incense) sacrifice' and the material closest related to that word (see P 262 f.) appears quite attractive.

2.2.3 *h* in suffixes and endings

h in Anatolian verb endings: see 5.

I here repeat the following from the conclusion with which the excursus ends: The Anatolian pret. active 1st p. sing. *-ḫa* (to which Hitt. *-ḫun* and present 1st p. sing. *-ḫi* should be transformations) is probably=PIE *-a* (Gr. *οἶδα*); the core of the medio-pass. 1st p. sing. *-ḫa(ri)*, *-ḫat(i)* is probably=PIE *o*; medio-pass. imper. 2nd p. sing. *-ḫut(i)* and *-ḫu* probably contain the "imperative *u*" (found in active as well as medio-passive Anatolian imper.) + *h* from 1st p. sing.

-aḫḫ- in factitive verbs, e.g. *arayāḫḫ-* 'liberate' (: *araya-* 'free'), *neyaḫḫ-* 'renew' (: *neya-* 'new, fresh' : Lat. *novus*, Skt *náva-*,

OHG *niuwi*), *idalayahh-* ‘hurt, harm’ (: *idalu* ‘evil’), *kururiyahh-* ‘fight, make war against’ (: *kurur* ‘enemy, enmity’), *maḡandahh-* ‘make strong again’ (: *maḡant-* ‘ripe, mature man’); to this hieroglyphic Luw. *tanatah-* or *tanata-* ‘empty’ (: *tanata-* ‘empty’) = Hitt. *dannattahh-* (: *dannatta-*) seems to correspond : Lat. *-ā-*, Celtic *-ā-*, Gmc *-ō-*, in, for instance, Lat. *novāre*, Gr. νεᾶω (infinitive νεᾶν), OHG *niuwōn* (Kuryłowicz 1927:102, Couvreur 1937:183, Hendriksen 1941:33, etc.).

The etymology is attractive but somewhat uncertain: In spite of the correspondence *neyahh-*: *novāre* etc. (the only one that there is) the possibility of a Hitt. (Anatolian) innovation must be kept open (cf. Kronasser 1966:424 ff.).

2.2.4 Summary of 2.2.1—3

Below are listed those *h*-words discussed that I have judged certain or probable or possible inherited words from IE. Concerning the words that are missing in the list, I have considered the connection/connections suggested with PIE linguistic material untenable or too uncertain or improbable to be credited with any value as a proof in the discussion of the origin of the *h*-words. Finally I repeat my conclusion concerning verb endings with *h* and the suffix *-ahh*.

(1) Words with *h*-

(a) The words are certainly or probably inherited from PIE:

<i>hant-</i>	<i>hāšša-</i>
<i>hanti</i>	<i>hastāi-</i>
<i>hantezzja-</i>	<i>hašter(ts?)</i> or <i>hster(ts?)</i>
<i>hap(a)-</i>	<i>hat-</i>
<i>happin(a)-</i>	<i>hapi-</i> , <i>hapa-</i>
<i>hara(n)-</i>	<i>hulana-</i>
<i>har(k)-</i> ‘hold, have’	<i>hugant-</i>
<i>harki-</i>	

(b) The words are possibly inherited from PIE (“uncertain etymology”):

<i>hā-</i>	<i>hišša-</i>
<i>hanna-</i>	<i>huhha-</i>
<i>harra-</i>	<i>hpiš-</i>
<i>hasduir</i>	

(2) words with *-h-* or *-hh-*

(a) The words are certainly or probably inherited from PIE:

<i>ešhar</i>	<i>paḥhur</i>
<i>išhāi-</i>	<i>palhi-</i>
<i>išhamāi-</i>	<i>tarh-(?)</i>
<i>nahh-(?)</i>	<i>tuhhuuāi-</i>
<i>paḥš-</i>	

(b) The words are possibly of PIE origin (“uncertain etymology”):

<i>išhunau-</i>	<i>parh-</i>
<i>lah(h)uuāi-</i>	<i>šanh-</i>

(3) Verb endings *-ha* (from which *-hi*, *-hun*), *-ha(ri)* (*-hat(i)*) probably originate — according to a traditional point of view — in *-a* and *-o*, respectively. The verb suffix *-ahh* is possibly = *ā* in Lat. *novāre* etc.

2.3 How does *h* in IE linguistic material agree with the laryngeal theory?

Very briefly I will in this section discuss the phonetic value of *h* (2.3.2), while I will give more scope to the question whether *h* is found or not where the laryngeal theory expects to find a reflex of *H* (2.3.1).

2.3.1 The distribution of *h* in IE linguistic material and the laryngeal theory

In 2.2.4 I have — after a review of the discussion on the subject and attempts (summarily) to take up standpoints of my own — listed those Anatolian *h*-words that certainly or probably or possibly are of PIE origin. The question of the heading of 2.3 is put on this basis. Its answering also requires, of course, that it is known if *h* is missing in relevant IE material. This I will discuss in the present section.

The distribution of *h* in Anatolian linguistic material of IE origin is related to the following four points of the full laryngeal theory: “*V- < HV-*, and/or *H* behind the quality of *a-* (and *o²*)”, “*ṽ < VH*, and *H* behind the quality of *ā* (and non-apophonic

-ō)", "H behind *ə* and \bar{R} ", "H behind certain peculiarities of initial R". Beyond these four points a matching of the occurrence or absence of *h* against assumed indirect reflexes of *H* does not seem possible to carry out. But there remain a few cases of *h* that are from the point of view of the laryngealists unwarranted or difficult to explain.

2.3.1.1 *h* and "V- < HV-, and/or H behind the quality of a- (and o²-)"

Of the words listed in 2.2.4 with initial *h*, those with *ha*- (of *hišša*- see 2.3.1.5; of the words with *hu*-, *hū*- see 2.3.1.3) are relevant here. The *h* that is the initial sound of a morpheme in the verb endings *-ha* (active voice), *-ha(ri)* etc. (medio. pass.) are relevant, too. In most cases we have to do with correspondence *ha*- : PIE *a*-, in three cases certainly, or almost certainly *ha*- : *o*¹- (*hara(n)*-, *hašduir*, *hau*-/ *haua*-), in two, again, (almost certainly) *ha*- : *o*²- (*harp*-, *haštāi*).

No cases of *he*- : PIE *e*- or *a*- or *o*- have been attested; and none of correspondence *ha*- : PIE *e*- either.

On the other hand numerous certain examples may be mentioned of Hitt. *e*- (and Luw., Pal. *a*-) corresponding to PIE *ē*-, such as:

eš- (and *aš*⁻¹), Luw., Pal. *aš*- 'be' : Gr. εἶμι, Skt *ásmi*, Lat. *esse*.

eš- (and *aš*⁻¹), Luw. *aš*- 'sit' : Gr. ἵσται, Skt *áste*.

ep(p)- (and *ap(p)*⁻¹) 'grasp, grip' : Lat. *co-ēpi* 'has begun', Skt *āpnóti* 'erreicht, erlangt' (and, with *əp*-, Gr. ἀπτω 'anfasse, anhefte, binde', Lat. *apīscor* 'fasse, erreiche').

ed- (and *ad*⁻¹), Pal., hieroglyphic Luw. *at*-, Luw. *az*- 'eat' : Gr. ἔδω, perfect participle (Homeric) ἐδηδώς, Lat. *edere* (*ēs*, *ēst*), perfect *ēdi*, Goth. *itan*, perfect *ētun*.

ešhar 'blood', *ešhanuuant*- 'bloody', Luw. *ašhanuuant*- : Gr. ἔαρ, Skt. *ásṛk* (cf. 2.2.2).

a- 'he, she, it', Luw. *a*- 'he' : Lat. *e-ius*, Skt *a-sya*, both gen. sing. (see further P 28 f.).

aššu- 'good, serviceable' : Gr. ἡύς 'able, good'.

On the other hand there seems to be no probable example of correspondence between Anatolian *a*- and PIE *o*²-.

¹ According to Kammenhuber 1963:225 the alternation is analogical with that of *eš*- : *aš*- 'sit' etc. (see 2.3.1.3).

Neither does Anatolian *a-* seem to correspond to PIE *a-* with certainty, though several assumed examples of this have been presented. I think *pāi-/piḡa-*, Luw. *piḡa-*, hieroglyphic Luw. *pa-(pi-)* ‘give’, interpreted as a connection of *pā(i)-* ‘hin’ and the verb that is found in Toch *ai-* ‘give’, Gr. αἴνυμαι ‘grasps, seizes’, αἴσα ‘lott, fate’, to be the least dubious of these (Götze—Pedersen 1934:63 etc.). But it is necessary that the analysis of the Anatolian verb is correct, which is, of course, not necessarily the case. More than most others the connection of Hitt. *ā-* ‘be hot’, participle *ānt-* ‘hot’, with Skt *antī*, *antikā* ‘foyer, four’, OIr. *áith* ‘fourneau, four’ (Benveniste 1962:107) deserves consideration. — Regarding the remainder of the assumed cases of correspondence Hitt. (Anatolian) *a-* (in *alpa-* ‘cloud’, *appan* ‘behind, later’, *ariḡa-* ‘question an oracle’, *arkuḡāi-* ‘beg’ or ‘beg pardon’?, *aruḡāi-* ‘sich niederwerfen, anbeten’, *au(š)-/u(ḡa)-* ‘see’, *aḡan* adverb indicating direction) : PIE *a-* and the justification of criticizing or throwing doubt upon them see chiefly Couvreur 1937:149 f., 157, Messing 1947:161 ff., Jonsson 1976:225 ff.; cf. also Lindeman 1970:37 f.

It should be remarked that the verb ending *-ḡa* derived from PIE *-Ae* (or in any case from *-H+vowel*) combined with the exception to “Brugmann’s law” of the type Skt *cakára* (see 3.2.2.7) could be used as a complex proof of the laryngeal theory. But *H* is not necessary in order to explain the exception to “Brugmann’s law” (see 3.2.2.7).

2.3.1.2 *h* and “ $\bar{V} < VH$, and *H* behind the quality of \bar{a} (and non-apophonic $-\bar{o}$)”

It is reasonable, but not absolutely necessary, to see a fundamental PIE long diphthong $\bar{a}u$ behind the certain inherited word *paḡhur*. In the probably also from PIE inherited *paḡš-* and *naḡḡ-*, *naḡšar*, and also in the suffix *-aḡḡ*, which is possibly of PIE origin, the fundamental PIE long vowel \bar{a} (traditionally expressed) is found, if the etymologies in question hold good.

Against these probable or possible cases of correspondence *-aḡ(h)-* : *:-ā-* may be urged several certain, probable or possible examples of correspondence of PIE \bar{V} to a vowel alone in Hitt. (Anatolian). The following belong to the most convincing cases:

da- 'two' in *da-ruga-* 'two-year-old', *dan* 'second': Lat. *duo*, Gr. δύο 'two'.

eš- 'sit' (see 2.3.1.1).

ep(p)- 'fassen, ergreifen' (see 2.3.1.1).

ḥašša- 'hearth' (see 2.2.1).

dāi- 'put', Lycian *ta-* : Gr. τίθημι, etc. (the root *dhē-*).¹

tāja- 'steal, steal from': Skt *stāyāt* 'secret, hidden', *stāyú-* 'thief', OIr. *tāid-* 'thief', OCS *tat*, Gr. τητάομαι 'am deprived of'. — The current etymology.² The root should probably in the first place be taken to be (s)*tāi-* (as in P 1010). It is considerably bolder to interpret it as (s)*tēi-*, as some scholars do.

This requires that the latter part of Lat. *mūstēla* 'ferret' is accepted as proof that Skt *stāyāt*, etc., contains the *o*-grade of the root and that Gr. τᾰτώμενος is to be kept aside. I only wish to point out that *-tēla* in *mūstēla*, interpreted as 'mousethief', may very well be thought of as being distantly related to PIE (s)*tā(i)-*: *ē* in *-tēla* may be the lengthened grade of the *e-* in Gr. στέλλω 'puts'.

Among possible examples of PIE fundamental long vowels corresponding to a vowel alone in Anatolian, may be mentioned the neut. pl. *-a* of Hitt. *a*-stems (possibly also of other stems) — the least satisfactory alternative is probably: analogical transference of the *-a* of the consonant stems, in which should be seen above all, PIE *ə*. In this connection I also want to point out that the coalescence in declension which has taken place between old *o-* and *ā-*stems in Hitt. (Anatolian) is easier to understand if the starting point has not been proto-Anatolian *-a-* : **-aḫ* or **-aḫḫ*. *Paš-* 'swallow, take a sip', finally, which has been traced back to the root *pō(i)-* 'drink' in Gr. πέπωκα (perfect) etc. (Sturtevant 1933:94 etc.) may be regarded as an uncertain case of the correspondence Hitt. *a* : PIE fundamental *ō*.

¹ It is also disputed whether the root *dō-* 'give' is contained in *ta-*, hieroglyphic Luw. *ta-* 'take' and the root *st(h)ā-* 'stand', in *tittanu-*, *titun-* 'hinstellen, hinsetzen, Platz nehmen lassen' and *tija-* 'treten, hintreten, sich stellen', as if all this Anatolian material is derivable from the root *dhē-* (see Friedrich 1952—54, with references to different interpretations). I am most inclined to believe in the latter explanation.

² Considerably inferior seems Cuvreur's alternative explanation (1937: 209): Hitt. (Anatolian) formation to *ta-* 'take' (which he connects with *dāi-* 'put').

2.3.1.3 *h* and “*H* behind *ə* and \bar{R} ”

The development PIE $\bar{a} \rightarrow$ Hitt. (and thereby, within reason, Proto-Anatolian) *a* seems probable. That the vowel alternation in *eš-/aš-* ‘sit’, *ep(p)/ap(p)-* ‘grasp’, *ed-/ad-* ‘eat’ (cf. 2.3.1.1) reflects PIE $\bar{e} : \bar{a}$ (Kammenhuber 1963:224) seems to be a well reasoned assumption. Further the chances are better that the neutr. pl. *-a* in consonant stems (e.g. *humanta*) may be traced back to PIE \bar{a} than to \bar{a} (concerning *-a* in *o*-stems, cf. 2.3.1.2). The most attractive explanation of *tittanu-* “hinstellen, hinsetzen, Plats nehmen lassen” is, lastly, the one given by Cuvreur (1937: 201): *ta-* < the zero grade *dhə-* of the root *dhē-*.¹

-uḫḫ- in *tuḫḫuḫāi-* possibly corresponds to \bar{u} in Lat. *fūmus*, Gr. $\theta\bar{\upsilon}\mu\acute{o}\varsigma$, and may by laryngealists be used as an uncertain support of “ $\bar{u} < uH$ ” (instead of the traditional $\bar{u} < u\bar{a}$, with \bar{a} as fundamental vowel).

In some cases *h* appears in words that probably or possibly contain *-R-*’s=liquids: *palḫi-*, *parḫ-*, *šanḫ-*, *tarḫ-*.

In 2.2 the PIE connection given to *palḫi-* is described as plausible. But an acceptance of a relationship between *palḫi-* and Lat. *plānus* etc. does not imply that \bar{a} or, according to the laryngeal theory, *H* has once existed in the word. *palḫi-* may contain an anit-base *pel-/pol-* (cf. Swedish *fala* etc.); a *seṭ*-base *pelə-*, moreover, is supported only by the etymologically uncertain Gr. $\pi\acute{\epsilon}\lambda\nu\omicron\varsigma$ (cf. Anttila 1969:148). Further Kronasser’s suggestion (1956:88) to see a suffix *-ḫi* of foreign origin in *palḫi-* will require some deliberation; if the word is so analysed the question will arise whether *pal-* really is of IE origin.

Concerning the verbs *parḫ-*, *šanḫ-*, *tarḫ-* I have judged the IE etymologies as possible but uncertain; least uncertain is perhaps the PIE origin of *tarḫ-*. If we have here to do with representatives of PIE *seṭ*-roots, it is impossible to decide whether the verbs contain full grades of the type *CVRə-* or zero grades, *C \bar{R} -*, even if the full grades is perhaps most likely.

¹ On the other hand Lindeman (1970:92) is right, when he asserts that *maklant-* ‘thin’, connected to Gr. $\mu\alpha\kappa\rho\acute{o}\varsigma$, Lat. *macer* (Benveniste 1935:140, Kronasser 1956:42 etc), is an uncertain example of Hitt. *a* < PIE \bar{a} : the suffixes are different and *maklant-* may contain the full grade *māk-*, in Gr. $\mu\acute{\eta}\kappa\omicron\varsigma$ (Doric $\mu\acute{\alpha}\kappa\omicron\varsigma$) ‘(body) length’ (in which case it is of interest for 2.3.1.2).

The linguist who sees a relationship between *h* i *palhi-* etc. and PIE *ə* may refer to the fact that there are Anatolian reflexes without *h* in aniṭ-roots of the type CVR- : *ar-* 'stand, stop' (cf. P 326), *tar-* 'say, mention' (cf. P 1089).

On the other hand the absence of *h* after *R* should also be observed in the following certain or probable instances of PIE seṭ-root or of a root that seems to waver between seṭ-form and aniṭ-form.

malla- 'grind' : Lat. *molere*, Lith. *malù*, *málti* etc. (see P 716 f.). — The etymology is probable but Lith. *malù*, *málti* seems to be the only evidence of a seṭ-root.

piddāi- 'run, hurry, fly, flee' : Gr. πέταμαι, πέτομαι, Lat. *petere* etc. (see P 923 ff.). — The etymology is comparatively probable. It is, however, uncertain if a seṭ-form throughout is behind the material that P ranges under "*petə-*, *pet-*".

hulana- 'wool' : Lat. *lānā*, Skt *ūṛṇā* etc. < *uḷ-nā* (see 2.2.1).

daluki- 'long' : Skt *dirghá-*, Gr. δολυχός, ἐνδελεχής OCS *dlъgъ*.¹

2.3.1.4 *h* and "H behind prothetic vowels in Gr. and Arm. and/or certain other traces of initial HR in Gr."

The words *huṇant-* and *huiš-* that in 2.1 were considered probably or possibly to be words inherited from PIE, have, if they are really of IE origin, Gr. relations with prothetic vowels.

As regards the word for 'star' the following is the case: From a graphic point of view the pronunciation may have been *haš-ter(ts?)*- or *hšter(ts?)*-. Further, it is probable that Accadian-Sumerian *istar* 'star' is related to the IE word. And it is at least as probable that PIE has received the word from Semitic as the other way about. This means that initial vowels of Gr. ἀστήρ, Arm. *astt* may have a non-IE origin (in spite of the contrast Gr., Arm. *a-* : Accadian-Sumerian *i-*).

It should be noted that the PIE *uē-* (or *ue-*?) and *ues-* (of interest for *huṇant-* and *huiš-*) seem to be in some way related to the *au-* in, inter alia, OC *awit* 'air', Cymrian *auel* 'wind, breathing (out)' and to the *au-*, *au-(e)s-* in, inter alia, Gr. ἰάω 'sleeps' <

¹ Further, extremely uncertain examples of $\overline{R}_o \rightarrow$ Hitt. *aRu*, are *aruna-* 'sea', which is by Puhvel (inter alia 1965:90) connected with Skt *īṛṇā-* 'stirred' as representing a seṭ-base (see however P 326), and *kaluti-* 'row, circle, community' which is by the same scholar connected with Gr. κλώθω 'spins'.

**i-aus-*, Arm. *aganim* 'spends the night'. Observe the complex proof of the laryngeal theory which has been seen in the occurrence of related word material of prothetic vowels and "Schwebeablaut" of the kind we would be concerned with here (see 3.2.2.3).

The absence of Hitt. *h* and Gr. prothetic vowels in cases such as *uāš-* 'clothe' : Gr. ἔννυμι, *uek-* 'wish' : Gr. *Ἐκών* agrees with the laryngealistic explanation of Anatolian *h* and prothetic vowels in Gr. and Arm.

An *h* that is unwarranted from a laryngealistic point of view is met with in *hulana-* (if the word really is related to Gr. *λῆνος* etc.). Neither Gr. nor Arm. have prothetic vowels in related material of interest (*λῆνος*, *λάσιος* 'thick-haired, woolly' etc., Arm. *gełm.*).

2.3.1.5 Occurrences of *h* that are unwarranted or embarrassing from the point of view of the laryngeal theory

In some words of certain, or probable, or possible IE origin, *ešhar*, *išhamāi-*, *išhunau-*, *h* is found (in the connection *-šh-*) in a position where *H* is not necessary according to the full laryngeal theory but does not disagree with it either.¹ The same thing is the case concerning medial *hh* in *huhha-* as long as it is not considered inevitable that *H* is behind the lengthening of Gmc (and PIE) *i*, *u*.

Clearly embarrassing to the laryngeal theory is *h(h)* in *lahhuhūi-* interpreted as a word inherited from PIE (which must, however, be considered to be a rather uncertain assumption). It is necessary to resort to "laryngeal metathesis" in order to make the Hitt. verb agree with the root *louə-* or *leuə-*.

Luw. *hišhiia-* (vis-à-vis Hitt. *išhāi-/išhiia-*) is probably an unavoidable example of a secondary occurrence of *h* in an Anatolian word of IE origin. The same is perhaps the case concerning *hišša*, that is, under the condition that the word is a Skt loan word (via Hurrian).

¹ It must be considered impermissible, or in any case as an emergency measure, to derive *ešhar* < *esAer*, as Couvreur does (1937:168). Hitt. *-ar* may be derived from *r*.

2.3.1.6 *Summary of 2.3.1.1—5*

The result of the discussion in 2.3.1.1—5 of how the distribution of *h* in Anatolian material of certain or probable, or possible IE origin agrees with the laryngeal theory may be expressed in the points (1)—(5) below.

(1) The thesis accepted by some full laryngealists, “all $V- < HV-$ ”, is not confirmed. A clear correspondence Hitt. (Anatolian) *e-* : PIE *e-* is confirmed. The relation Anatolian *hV-* : PIE *V-* only seems to hold for *ha-* : PIE *a-* and for *ha-* : PIE *o-*, *o*² as well as *o*¹, but, on the other hand, to these points there are no (quite) certain exceptions.

(2) “ $\bar{V} < VH$ ” is not confirmed by Anatolian *h*. There are several quite certain cases of Hitt. (Anatolian) *e* : PIE *ē*. As regards PIE *ā* both the correspondence Anatolian *ah(h)* : PIE *ā* and Anatolian *a* : PIE *ā* seem to exist; the material is, however, rather slender even if somewhat uncertain instances are included.

(3) Concerning the thesis “*H* behind *ə* and \bar{h} ”, which is so essential to the laryngeal theory, the following is the case: In one case Hitt. *uhh* may possibly correspond to PIE *ū*. In four cases Hitt. words with *-Rḥ-* may be understood as reflecting PIE *seṭ*-roots *CERə-* with *R*=liquids, but all are to some extent uncertain. In some cases, again, at least two of which are probable, *h* seems to be absent in words that contain a *seṭ*-root of this kind. In the Anatolian instances of *aniṭ*-roots (at least two certain cases) of the type *CVR-* (and *CVC-*), finally, *R* is not followed by *h*.

(4) As regards the thought “prothetic vowels in Gr. and Arm. $< H$ ”, accepted at least by the majority of laryngealists, the following is the case: There seem to be one probable (*huyant-* or *hyant-*) and two merely possible examples (*huiš-*, *haster-* or *hster-*) of correspondence between Anatolian *h* and Gr. prothetic vowels. In the cases *huyant-*, *huiš-*, besides, the IE material of interest seems to show a “Schwebeablaut” *ue-* \sim *au-*, for which reason these Hitt. words may be used as an argument in a complex proof of the laryngeal theory (see 3.2.2.3). On the other hand there is one probable example (*hulana-*) of *h-* appearing without the assumed *H* giving a prothetic vowel in Gr. (and Arm.), but at the same time there are also several Hitt. words without initial *h*, which contain a root with *ueC-* without prothetic vowel in the Gr. words belonging to it.

(5) *h* is found in material that is certainly, or probably, or possibly IE in a few cases where there is no "need" of it, but where it is no inconvenience either. This is the case in some words with the combination *šh*, and also in the word *huhha-*.

In one case (*lahhuyāi-*) — which has, however, a quite uncertain relation to IE-, *h* is found in the "wrong place" in the word.

A conclusive judgement to sum up (based on the points (1) — (5)): Of the theoretical assumptions of the laryngeal theory it is only "*H* behind *a*-vowels" that seems to get clear support from the distribution of *h*. That is — on more careful judgment — it may be said to support the skewed distribution of the vowel *a* (see 3.2.2.1.1). Regarding "*H* behind *o*²" the situation, unsatisfactory to a laryngealist, is this: there are a few cases of correspondence *ha-* : PIE *o-*, but this seems to hold good both concerning *o*² and *o*¹. For the other points of the laryngeal theory where relevant material in Hitt. (Anatolian) has been presented, the situation may briefly be described thus: *h* is sometimes found, and sometimes not, in positions where the theory would expect *H*, while there is exceptionless, or almost exceptionless counter-material (i.e. Anatolian *h*-less material corresponding to IE linguistic material without *H* according to the laryngeal theory). However, the point in favour of the laryngeal theory (possibly in a reduced version) that lies in this is rather insignificant on account of the fact that the *h*-material of interest is so small, and moreover the greater part of it is more or less etymologically uncertain.

The above may be said to concern a test of the evidential weight for the laryngeal theory of the distribution of Hitt. (Anatolian) *h* with the requirement that this distribution should correspond faithfully to the distribution of the construction *H* in PIE. Naturally it is possible to assume a certain development between *H* and *h*, something that most laryngealists do (cf. 1.3.1.14.3.2). But it is reasonable to say that no such assumed developments carry so much probability that they without handicap to the theory can make the distribution of *h* agree with the distribution of *H* (in any case not with the appraisal of the *h*-material made here). A still more manifest drawback to the laryngeal theory, is, of course, the construction of further *H*'s for the express purpose of making *H* and *h* harmonize (or chiefly for that purpose) (cf. 1.3.1.14.3.2).

In a final appraisal I will return (see 4.) to the above preliminary result, after discussing the possibility of attributing to *h* a non-IE origin (see 2.4), and also the indirect proofs of the theory that the laryngealists consider that they have found (see 3.).

2.3.2 The sound value of *h* and the laryngeal theory

Naturally no ideas belonging to the laryngeal theory may be allowed to direct the attempts to decide the sound value of *h*.

There are two rather penetrating discussions in this field that seem to satisfy the demands for unconditional examination, Puhvel 1965: 80 ff. and Kronasser 1966: 95 ff.

With reference to these two discussions, and also to the typological reasoning of Keiler (see 1.3.1.12) I will here only briefly draw attention to the following: The use of *h* in Acc. (and in other non-IE cuneiform languages?) seems to place Anatolian *h* within a phonetic sphere that is useful to the laryngeal theory. It is possible, but no more, that *h* stands for a sound which may have an *a*- and *o*-colouring effect and which to some extent may alternate between a basic consonant value and a vocalic state. — Fairly obviously *h* may stand for a sound that, on being lost, causes lengthening of the preceding vowel.

2.4 Must Anatolian *h* be given a PIE origin?

The question of the heading may be considered justified by the fact that *H* in the case of the full laryngeal theory and the Anatolian *h* by no means fit together like bungs to bung-holes (see 2.3.1.6) and that to anyone who is unbound by the laryngeal theory (and its belief in indirect or in any case not exclusive reflexes of *H*) the situation is this: *h* is found in Anatolian and is missing in all other IE dialects.

Irrespective of his opinion about the laryngeal theory it ought to be a matter of course for anyone who matches the distribution of *h* in Anatolian linguistic material of IE origin against *H* to take into account the occurrence of *h* in Anatolian linguistic material in general. This has generally not been done.

h is a frequent symbol throughout the Hitt. and Luw. material in Friedrich 1952—1966, which contains linguistic material of IE

origin, linguistic material of unknown origin (the greater part) and borrowed material from known languages (Hurrian, Hattish, Accadian). *h* is also found in Pal., where, however, the known linguistic material is too small to allow anything to be said about the frequency of *h*.

Regarding the origin of *h* in linguistic material of IE origin and that of unknown origin together it is possible, quite theoretically, to choose between the following alternatives:

- (1) *h* belongs originally only to the IE material, and *h* in non-etymologizable words and morphemes is secondary and emanates from PIE.
- (2) *h* belongs originally only to material of unknown origin, and *h* in IE words and morphemes emanates from the language or languages behind the strong foreign influence that Anatolian must have been subject to.
- (3) *h* is genuine in the IE as well as in the etymologically unknown linguistic material. — Possibly there has been some influence in either direction, or both.¹

The question should be raised whether anything in the distribution of *h* can guide the choice between these alternatives.

After a review of the Anatolian linguistic material in Friedrich 1952—1966 I find that the situation is the following:

- (1) *h* in Anatolian words and morphemes from PIE has no exclusive position compared to *h* in Anatolian generally, and on the whole "IE *h*" occurs in positions where *h* in Anatolian material of unknown origin is (most) frequent: *ha-*, *hu-*, or *hū-*, *-ah(h)a-*, *-ahhū-*, *-šh-*, *-rh-*, *-lh-*, *-nh-*.
- (2) There are positions for *h* in Anatolian linguistic material of unknown origin that — according to my etymological appraisal — are not found in the material inherited from IE, viz. *-hr-*, *-hl-* and *he-*, *hi-*. But their absence is hardly statistically surprising,

¹ It must probably be considered as out of the question that *h* in Anatolian, except for the known borrowed material, originates in (any of) the languages responsible for the material (Hattish, Hurrian, Accadian). Quite a lot is known about Hattish and Hurrian (see Kammenhuber 1969, and also Friedrich 1969), and besides an influence as profound as that which, as far as can be ascertained, had already taken place in common Anatolian, must have occurred before the aforementioned non-IE languages in Anatolian could have exercised their influence.

if the *ḫ* in Anatolian is viewed without etymological speculations. *-ḫr-* etc., are no frequent uses, and the known inherited IE material of Hitt. (and Luw.?) is not more than a fifth of the whole vocabulary (see 2.1).

The distribution of *ḫ* in the different linguistic strata (and throughout the Anatolian material) probably gives to neither alternative any advantage over the others.

However, anyone who takes an interest in *ḫ* outside the words and morphemes that can be established to be of IE origin has access to an important piece of information: *ḫ* in (possibly or probably) IE words or morphemes shows no exclusive trait in its distribution. If this had been the case, if we had here, contrary to what is the case in other linguistic material, found for instance combinations of stops and *ḫ*¹ or if we had found *ḫ* as the final sound in words,² there would have been an evident argument against alternative (2).

From the aspect discussed above the following assumption, then, should be an acceptable alternative: "*ḫ* in PIE linguistic material comes from the unknown non-IE language (or languages) that are responsible for the major part of the Hitt. and Luw. (and Pal.?) vocabulary (with *ḫ* as a frequent consonant-symbol)". At least partly *ḫ* must originate in a time when Anatolian was still one language, and its users had not yet come to Asia Minor. The Caucasian languages are geographically well suited to the rôle and in spite of the fact that we have to do with two thousand years younger inheritors to the assumed influencing language(s), linguists have not refrained from pointing out that they show certain traits that are also specific traits common to Hitt. (or Anatolian) and Arm. (see 2.1).

In the IE words with *ḫa-*, *-aḫ(h)-*, and in the suffix *-aḫḫ-* and the verb ending *-ḫa* etc., I suggest that a secondary *ḫ* could enter because the native Anatolian *a* (< PIE *ǎ*, *ǝ*) was qualitatively close to or identical with the vowel sound in *ḫa*, *aḫ(h)* of the

¹ The isolated case of *-tḫ-* in Hitt. *tetḫāi-* 'thunder' (and verbal nouns formed to it: *tetḫeššar*, *tetḫiššar*, with the variant *tetkiššar*) must be given a special explanation. On the other hand the sounds behind the symbols *k*, *p*, *t* and *ḫ* in Hattish seem possible to combine (see material in Friedrich 1952—54: 316—319, Kammenhuber 1969).

² That sounds symbolized by *ḫ* do not automatically "shun" final position is seen from Hattish, where that position is frequent for *ḫ*.

influencing language(s). This would explain the preference for a position beside PIE *a* (and *o*, but not only *o*²) shown by *ḫ*, which is otherwise embarrassing to a non-laryngealist. In the remaining positions in IE linguistic material *ḫ* may have been introduced because words that were closely related as to meaning (and form) were found in the influencing language(s); *h* aspirée in French seems to be a parallel to this kind of development (cf. Kronasser 1956: 80). — It seems impossible to get beyond such rough guesses.

To conclude, a few words regarding the non-laryngealistic explanations of *ḫ* mentioned in 1.3.3.

The derivation of *ḫ* from a hiatus-breaking glide is arbitrary with regard to the fact that appearance of a glide does not follow any phonemic rules, while *ḫ* is a stable sound, to judge from the consistent writing, and evidently has a phonemic value (cf. Polomé 1965: 36, and note 60 p. 36 f.). And even more obvious is the refutation of Satya Swarup Misra's explanation. It is quite unthinkable that a peculiarity that is originally graphical, and imported from the Accadian has created phonemes in a still undivided Anatolian, which is what we are compelled to assume on account of the great correspondence between the Anatolian languages in the occurrence of *ḫ*.

Against the background of all that is said above under 2.4 the answer to the question of the heading will be: From a purely Anatolian point of view it is advantageous to avoid counting on a foreign origin of *ḫ* in IE words and morphemes; import of a phoneme is, after all, quite a bold assumption. But anyone who thinks that non-Anatolian circumstances speak against a counterpart to *ḫ*, in cases like *ḫant*-, *ḫašša*, *ešḫar*-, *paḫḫur*, having existed in PIE, may point to the fact that there are relatively good reasons for interpreting Anatolian *ḫ* as an innovation.

I will here only give this outline of the problem and return to the question whether Anatolian *ḫ* is (at least partly) inherited or (entirely) a loan, in my final conclusions concerning the theory in chapter 4.

3. Discussion of other assumed supports or proofs of the laryngeal theory than Anatolian *h*

It is suitable to divide the assumed supports or proofs of the laryngeal theory discussed here into supports/proofs of a more general (structural) kind and supports/proofs of a more special kind (see 1.3.1.14.4).

3.1 Assumed more general (structural) supports or proofs

To Saussure it was an “algebraic” proof in itself of the theory of “les coefficients sonantiques *A, Q*” that the PIE vowel system by this theory — in combination with the view that *i, ĭ* and *u, ŭ* basically are allophones of the phonemes /*ĭ*/ and /*ŭ*/ respectively — became more simple: one single basic vowel, *e*, and thereby also uniformation of the quantitative ablaut into only *e/o : Ø* (or, to believers in “schwa secundum”, *ə*).

All successors to the theory of Saussure have probably been influenced by the structural simplification it gave to the PIE vowel system.¹ But many modern laryngealists think this advantage on the mathematic-structural level is won at the cost of empirical probability. For Saussure’s hyper-simple vowel system seems to be unique, or at least to represent something very rare among known phoneme systems (see 1.3.2.3 Szemerényi).

However, it is not, on the other hand, the case that the full laryngeal theory actually must lead to consequences for the PIE vowel system that make it implausible in any conclusive way. It is probably far from certain that the only source of the vowels

¹ To the PIE phonemic system as a whole the laryngeal theory means no simplification, rather a complication.

i and *u* is the vocalization of *i̥* and *u̥* (cf. 1.3.1.1 Kuryłowicz; cf. 1.3.1.9 Schmitt-Brandt). From the fact that it is possible that PIE, in spite of the acceptance of the laryngeal theory may be credited with at least three fundamental vowels,² there should be no obstacle to the acceptance of the theory with regard to phonological typology.

Concerning the simplification of the PIE vowel system that the laryngeal theory in any case brings with it, it should be remarked that structural simplicity and regularity, as is well known, has no historical priority in itself, far from it. Only the existence of more specific evidence (of morphological or phonetic kind, etc.) can therefore prove the construction "the core of the laryngeal theory" (of which see 1.3.1.14.1). This also means that aspects of economy in description are not relevant in this connection (cf. on the other hand Misra 1968, see 1.3.3). In the next section I shall discuss such assumed more specific evidence. But before that there is reason to give further arguments for the view that the laryngeal theory may be easily dispensed with, under condition that the assumed more specific supports treated in 3.2.1—2 do not prove it necessary.

The following questions may (and should) be added:

(A) Can \bar{V} with regard to its distribution and frequency be interpreted traditionally, i.e. as a really fundamental long vowel or in any case as a long-vocalic full grade form to \bar{a} ?

(B) Does the character of \bar{a} — as it seems it should be understood — allow it to be seen as an original vowel, and is there room for this in the PIE vowel system?

As regards question (A) should first be stated that \bar{V} above all seems to be radical, but that it is also found in suffixes or root-enlargements and in endings.

(Fairly) certain cases of radical \bar{e} , \bar{a} , \bar{o} are the following:

dhē- : *dhā-* 'put' (P 235 ff.)

ēg- : *āg-* 'say' (P 290 f.)

ēp- : *āp-* 'grasp, take, get' (P 50 f.)

iē- : *iā-* 'throw' (P 502)

mē- : *mā-* 'measure' (P 703 f.)

rē- : *rā-* 'calculate' (P 59)

² It is, however, tempting to see a more original triad *a*, *i*, *u* behind *e*, *i*, *u* (see 3.2.2.1). Regarding the attempts of some laryngealists to add to the number of original vowel phonemes in PIE see 1.3.1.13 Lindeman.

And further:

ġhē : *ġhə*- 'gape, stand open' (P 419 ff.) but also *ġhēi*- according to P

lēd- : *ləd*- 'be lazy or tired' (P 666) to *lē(i)*- according to P

sē : *sə*- 'sow' (P 889, 890) to *sē(i)*- according to P

sp(h)ē- : *sp(h)ə*- 'long, flat piece of wood' (P 980); cf. (*s*)*p(h)ē(i)*- : *sp(h)ĩ*- 'point, pointed piece of wood' (P 981) and *sphē(i)* : *spī*, *sphē*- *sphə*- "gedeihen, sich ausdehnen" (P 983 f.)

bhā- : *bhə*- 'speak' (P 105 f.)

bhā- : *bhə*- 'shine, gleam' (P 104)

pā- : *pə*- 'feed, nourish, let graze' (P 787)

sā- : *sə*- 'satisfy, satisfied' (P 876)

sāg- : *səg*- '(sniffing) search for' (P 877)

And further:

dā : *də*-, also *dāi*- : *dĩ*- 'divide, cut in two' (P 175 ff.)

lā- : *lə*-, also *lāi* 'hide, be hidden' (P 651).

And (without attestation with ablaut-related *ə*) : *bhāgós* 'beech-tree' (P 107), *bhrātér* 'brother' (P 137), *māter* 'mother' (P 674)

dō- : *də*- 'give' (P 223 ff.)

And further:

pō(i)- : *pī*- 'drink' (P 839 f.)

po(i)- : *pī*- 'let graze, watch' (P 839)

\bar{V} in suffixes and the like or endings seems to occur in: The optative suffix *-iē* : (*-iə* →) *ī* (see for example Meillet 1934: 224 f.).

The suffix *-ā* : *-ə* forming a collective and the suffix *-iā* : *ī* in fem. nouns. — This in anticipation of the discussion in 3.2.1.7.1.

\bar{V} as a root-enlargement in bases of the type *CR \bar{V}* - (and *CC \bar{V}* -) from which possibly the *- \bar{V}* that constitutes verb stems with a certain aspect (see 3.2.1.2).

Observe also the verb endings in the 1st p. sing. *-ō* (Lat. *ago*, Gr. *ἄγω*), and "root nouns" of the type Skt *pánthā*- (with ablaut \bar{V} : *ə* in the last syllable of the stem) which represent an expansion of a genuine root noun of the type Skt *-pā*- (in *gopā*- 'shepherd').

At least as far as radical \bar{V} is concerned there is further material with \bar{V} that may be of interest here — observe especially the

problematic interpretation and delimitation of "PIE long diphthong".¹ However, the most certain material has been treated here; so it seems to me on the basis of P and, to some extent, of other literature on the subject.

It should, besides, be possible to defend a non-laryngealistic view of \bar{V} on a sufficiently general plane to be on the safe side in case a more scrupulous investigation should show that the frequency of (tolerably) certain \bar{V} 's is considerably greater (or perhaps smaller) than I have reckoned with.

If it is thought that the proportion between PIE \bar{V} 's and V requires an explanation from a frequency and/or distribution point of view, it is always possible to assert that a development has taken place between an earlier period with a more natural distribution of long and short vowels and the period we immediately get into contact with by studying the IE dialects. This development would then most likely be one of the shortening of long vowels to a certain extent. But theoretically it is perhaps possible to conceive of an original stage with only short vowels — as the full laryngealists do — and PIE \bar{V} as a result of a lengthening. In both these non-laryngealistic speculations there should be room for a possibly needful explanation of the preference for radical \bar{V} in the root type $C\bar{V}$ - vis-à-vis the considerably less common $C\bar{V}C$ - : it may be conceived of as a prosodic "aversion" against a special type of root, CV -, and as the result of a development CV - \rightarrow $C\bar{V}$ -.

If we isolate the section " $\bar{V} < eH$ " of the laryngeal theory for the present, it is possible to assert, without further argument, that in so far as the frequency and/or distribution of \bar{V} requires an explanation, the insertion of an unknown unit H implies more speculation than the assumption of a change of quantity for some other reason than a lost H .

Now over to a discussion of ∂ .

As I have already mentioned, I will here discuss whether ∂ may be interpreted as an original vowel from a more general point of view, or in any case, for the present, without regard to the obstacles against this view urged by the laryngealists and treated in 3.2.

From a traditional interpretation of ∂ it may be stated that the vowel dropped out in non-final second syllables in Balto-Slavic,

¹ See the historical outline in Schmitt-Brandt 1967: 32 ff.

Iranian, Gmc (perhaps not totally, however; see below), Armenian. It also dropped out in a few cases in first syllables, at least in weak cases of Avestan *pitā* 'father' (inter alia dat. sing. *fəðrōi*) and in certain forms of *dā-* 'give', *dhā-*, 'put' (see 1.3.1.1 Kurylowicz, 1.3.1.10 Kuiper), and further in final position in Avestan neut. pl. in a case like *dāmam*, as compared to Skt *dhāmani*.

Concerning the quality of retained *ə* in the IE dialects the principal rule is this: Indo-Iranian *i* : other dial. *a*. But a phonetic development to Gr. *ε*, *ο* seems inevitable too (see chiefly Beekes 1969:186 ff., 227 ff.). Coalescence, to some degree, with PIE *e* has also been asserted for Toch. (see 1.3.1.8.3). Further, it seems possible that *ə* in Gmc was not entirely lost in non-final second syllables and closed final syllable, but is there to some extent reflected by *u*, perhaps also by *i* and *a* (see 1.3.1.6 Lehmann). This points to the possibility that the reflexes of *ə* in IE dialects might have shown a more varied picture if the sound had not dropped out to the extent that it did.

ə's tendency to drop out and its qualitative variation suggests a weak vowel of the same type as English *ə*.

With regard to the fact that *ə* without any attested apophonic alternation with \bar{V} occurs so often in the second syllable, mostly in established set-roots (see 3.2.1.2), it would be unreasonable or at least arbitrary to explain all *ə*'s as apophonic reductions of \bar{V} (cf. in this connection — see 3.2.1.2 — that it seems that an earlier base *CeR \bar{V} -* is not necessarily behind *CR \bar{V} -* for other reasons either).

Against the background of what has been said above I would like to suggest: *ə* existed before the emergence of quantitative ablaut in \bar{V} and when this ablaut appeared the reduction product of \bar{V} coalesced with the already existing *ə*.

It is known that the loss of a short vowel can correspond to the reduction of a long vowel.¹

With the view "all *ə*'s=reductions of \bar{V} " *ə* has by nature an unstressed position and nothing can gainsay the assumption that a zero grade vowel here arose, phonemically a syncretism of *a*, *e*, *o*, it may be supposed.

With the view that I have above presented as the soundest inter-

¹ Thus in Proto-Gmc → Proto-Norse, see Noreen 1913: 80, 83.

pretation it is more difficult to decide whether an ∂ that is originally vocalic fits in the PIE vowel system.

If ∂ is most original in $\text{se}\check{\text{t}}$ -roots ($\text{CeR}\partial$ -, $\text{CeC}\partial$ -) and isolated formations like $\text{an}\partial\text{t}$ -, $\text{dhug(h)}\partial\text{ter}$ -, perhaps the least problematic assumption is that it started from a non-phonemic vocalic segment that secondarily received a phonemic value. However, it is probably also impossible to prove that a radical CeRa - or CeRe - or CeRo - (or CeCa -, etc.) necessarily would lose the second vowel in the accent position $\text{C}\acute{\text{e}}\text{Ra}$ - etc., through ablaut, and that it could not instead develop into $\text{CeR}\partial$ - etc.

As drawbacks to the interpretation of ∂ as an original vowel may be mentioned: Why was not the result of the reduction of \bar{a} , \bar{o} , \bar{e} to a greater extent a , e , o or in any case more varied than it is?

What is most important in this connection is that the laryngeal theory, as far as I can see, has no clear advantage over other theories as regards this possibly justified objection against a non-laryngealistic interpretation of ∂ .

According to Keiler's account of the theory (see 1.3.1.12) it seems that H may be seen as R , and ∂ may be derived from \check{H} (by which means it is possible to avoid working with the assumption that ∂ originates in v in contact with H , which under all circumstances is ad hoc). And with H already accepted it is an advantage to reckon with the triad A , E , O (see 3.2.2.1). This being so I consider it possible to see H behind ∂ (of course under condition that the laryngeal theory is for other reasons justified). But this does not mean that the laryngealistic explanation is free from problems:

(1) Why not a , e , o from A , E , O , respectively, or in any case greater evidenced phonetic variation in the phoneme $/\partial/$? One ad-hoc assumption is the thought (see 1.3.1.4 Couvreur, 1.3.1.13 Lindeman) that A , E , O coalesced before their vocalization.

(2) The possibility which is evidently at hand of interpreting ∂ as \check{H} (see above) can not be taken as a guarantee that eH in the zero grade would give ∂ . At least $\text{dheHt}\acute{o}$ - (to $\text{dh}\bar{e}$ - 'put') might, for instance, have had an analogous development to the type $\text{akt}\acute{o}$ - (to ag - 'drive', P 4 ff.), $\text{pek}^u\text{t}\acute{o}$ - (to pek^u - 'cook', P 798), the development $eH \rightarrow H$ ($\rightarrow \check{H} \rightarrow \partial$) being prevented through H 's basic or main character of consonant.

Neither does the fact that ə shows variation as regards preservation or loss and that there is also within a single IE dialect and within a paradigm an alternation $\text{ə} : \emptyset$ make necessary the assumption prevalent among laryngealists (see chiefly 1.3.1.2 Pedersen—Hendriksen, 1.3.1.10 Kniper) that an alternation between Ḥ (or v in contact with H) and H (alone) is the reason. That a weak vowel should drop out or remain to a varying extent is what is to be expected. And the assumption of the vocalization or non-vocalization of H may always be replaced by the assumption of the preservation or loss of a weak vowel.

There is reason to assert that from the general points of view hitherto discussed there is no need of H to explain \bar{V} or ə and the ablaut $\bar{V} : \text{ə}$.

3.2 Assumed more specific supports or proofs

Everything that may be considered to speak in favour of an R or C behind ə constitutes a support or a proof of the laryngeal theory. For if ə is shown to be the vocalic allophone of an R or to emanate from v in contact with a C , the ablaut $\bar{V} : \text{ə}$ must reflect an alternation eH (or, if that type of reduced laryngeal theory is accepted, eH, aH, oH) : Ḥ (or $\text{v}+H$). Further, the laryngeal theory receives support or proof if H can be traced, where the vowel ə does not appear, in a way that may be linked to the core of the theory. The last statement is relevant to the assumptions, for instance, that H caused the skewed distribution of the a -vowel (see 3.2.2.1) or gave rise to prothetic vowels in Gr. and Arm. (see 3.2.2.2).

There are applications of the laryngeal theory, known to me, that are not included in the historical outline (chapter 1). At least in two cases we have to do with something else than special cases or further developments of the applications mentioned in chapter 1.

Thus Swadesh (1970) has combined Skt *kam-* 'love' with Lat. *amāre*, put the alternation between PIE "gutturals" and initial "laryngeals" that he, here and in a few other cases, assumes on a level with an alternation like Goth. *haban* (PIE $k-$) : Lat. *habere* (PIE $gh-$) and regards this to be jig-saw pieces in a large complex, "paradigmatic alternation of consonants". His idea is stimulating, but it is concerned with facts so uncertain as to have no relevance

for the laryngeal theory as such, but actually, in the eyes of many people, lessens its credibility.¹

In Liebert (1957) we meet another original use of the laryngeal theory. He embarks upon a very bold construction chiefly with the aim of explaining alternations in IE personal pronouns, Lat. *ego* : *me* : *mihi*, *tu*, *te* : *tibi*, *se* : *sibi* etc. What is most original about this is the derivation of (all?) PIE *bh* and *ǵ*, *ǵh* from clusters of *u* and *i*, respectively, followed by *H* (whereby *uH*, *iH* also are assumed to have arisen through a metathesis of *Hu*, *Hi*). As regards the evidence in favour of the laryngeal theory, I judge Liebert's work in the same way as that of Swadesh.

And in principle I give a similar verdict to all uses of the laryngeal theory not mentioned in my historical outline. In spite of much reading of literature it is certain that there are uses of the laryngeal theory that are unknown to me. It is only to be hoped that their retired place in the discussion around the theory corresponds to small or non-existent importance for that theory.

There are also applications of the theory which are mentioned in my historical outline but not discussed below in 3.2.1—2. I will below treat applications of this kind and immediately briefly dismiss them, with a few points on details and with the general judgment: as a rule they actually constitute a handicap to the laryngeal theory.

They are the following:

(1) A few assumed cases, found only in one or a few dialects, of $\bar{V} < eH$ (cf. 3.2.1).

(a) The Lat. perf. *ēdi*, *ēmi*, *ēpi* (see 1.3.1.3 Benveniste, 1.3.1.5 Sapir—Sturtevant). — *ēdi* may originate in **eed-ai* to a "zero grade form" *ed-* (see Cowgill 1960: 491, note 22), *ēpi* may contain primary *ē* (see P 50 f.) and *ēmi* is perhaps an analogous formation to other perf.'s with *ē* (chiefly *ēpi*, *ēdi*, but cf. also *iēci*, *ēgi*, etc.); further *ēd-*, *ēm-*, *ēp-* may be contaminations arisen on the basis of sing. **eod-*, **eom-*, **eop-* → **ōd-*, **ōm-*, **ōp-* : pl. **ed-*, **em-*, **ep-*.

(b) *mē*, *nē*, *sē* alternating with *me*, *ne*, *se* (see 1.3.1.5 Sapir—Sturtevant). — Obviously the alternation in quantity may be ex-

¹ I will here only point out that the desirability of being able to connect the mentioned Skt *kam-* and Lat. *amāre* is by no means so great if the matter is explored somewhat deeper: *kam-* emanates from a root *kā-* 'desire' (see P 515) and nearest from a *mo*-derivation thereof in Skt, *kāmá-* 'wish'.

plained without the help of *H*, and it is ad hoc to suppose that the long vowel variant developed before initial consonants, the short vowel variants before *V*-.

(c) Long augment in Gr. and Skt (see 1.3.1.5 Sapir—Sturtevant). — In the type $\tilde{\eta}\alpha$, *ásam*, etc. it is hardly daring to see a generalization of the sing. form. For the type $\tilde{\eta}\delta\eta$ (i.e. before a lost *F*) — as for cases of long augment before *R* in Skt (see Whitney 1931: 587) — I have no alternative explanation to hand, but the use of the laryngeal theory here is still ad hoc. Observe that a prothetic vowel, which in reason should originate in PIE *ə* and therefore, if the laryngeal theory is accepted, give evidence of *H* (see 3.2.2.2), is practically never found in the verbs in question.

(d) Gmc \bar{e}^2 (see 1.3.1.5 Sapir—Sturtevant). — An atrocious piecing together of hypotheses.

(2) The possibility of making $u\bar{a}$ - : $uebh$ - ‘weave’ and $m\bar{e}$ - : med - ‘measure’ analogically formed ($u\bar{e}A$ - : $uebh$ -, $m\bar{e}H$ - : med -) with the help of the laryngeal theory (see 1.3.1.3 Benveniste). — The material is too small to be credited with any value as a proof.

(3) The special effects that Martinet attaches to his A^u , and the thoughts in Puhvel that build on them, and also Diver’s use of his E^i , a counterpart to A^u (see 1.3.1.7 Martinet). — I refer to the criticism of a laryngealist, see Cowgill 1965: 176 ff.

(4) The assumptions that voiceless consonants became voiced and voiced consonants voiceless in contact with *H* (see 1.3.1.1 Kuryłowicz, 1.3.1.5 Sapir—Sturtevant). — A typical handicap to the laryngeal theory, as it, except the accepting of the core of the laryngeal theory, also requires the unconfirmed assumption: *H* had the contrast voiced: voiceless.¹

(5) The OHG *r*- pret. (see 1.3.1.6 Lehmann). — An atrocious piecing together of hypotheses.

3.2.1 Assumed more special (morphological) supports or proofs of $\bar{V} < VH$ (and of the special case $\bar{a} < eA$)

3.2.1.1 the *nā*-present

To begin with I refer the reader to Puhvel 1960: 14 ff. concerning material about the *nā*-pres., concerning verbal infix with *n* on the

¹ Hitt. medial $h\bar{h}$ vis-à-vis $-h$ - need not be interpreted as a contrast voiced : voiceless (see inter alia Keiler 1970: 94).

whole, and also concerning the development of this type of present-stems and the history of research on the subject.

Here it will suffice to remind the reader that the formant *nā* in the Skt 9th verb class ever since Saussure has been derived by laryngealists from what may be written *neə*, on account of the parallelism with the 7th and 5th verb classes then attained: in all cases an infix *ne* (in the zero grade *n*) before the last sound of the root, or, as Benveniste sees it, an infix *n* before a suffix *eC* or *eR* (in the zero grade *C*, *R*).

If Saussure's analysis of the type *yunákti* < PIE *īu-ne-g-ti* (to *īeug-* 'bind'), and *vr̥ṇóti* < *uḷ-ne-u-ti* (to *uelu-* 'roll') is accepted, and the 9th verb class is assumed to be formed to a set-root of the type *CəRə-* (*punāti* to *peṇə-* etc.) — the original connection between *nā* and the set-root on the whole may be considered to be obvious — the derivation of *nā* < *neə* seems inevitable.

But we still know nothing about the ultimate origin of the infix or in which type or types of root the present with a nasal infix began, and in this lies a possibility of escaping from the assumption *nā* < *neə*.

Perhaps the type *CRneC-* is earlier than *CRnā-* and *CRneu-*. Irrespective of whether the insertion was from the beginning *ne* or only *n*, it is possible, perhaps even most probable, that *e* in *CRneC-* was felt to be equivalent to *e* in other pres. stems. Whatever the previous history the analysis may have been *CR-n-e-C-*. And in that situation *n* may have expanded to *CeRə-* (set-root) and *CeRu-* (root+the enlargement *u*). Thereby *C(e)Rnə-*, *C(e)Rnu-* arose, which then, analogically, received *-nā-* and *-neu-* respectively. in the sing. — The non-appearance of the development *nə- → ṇ-* in *C(e)Rnə-més* etc. may be explained by there being two contiguous *R*'s (and may be assumed to be analogical in the much rarer type *C(e)Cnə-més*).¹

It must be admitted that this is a clearly inferior and less "straight" explanation of *nā* than < *neə*. In this lies a plus to the laryngeal theory to be kept in mind for the conclusion (in 4.).

¹ If the set-roots are derived from a pre-form *CeRṼ-*, from which emanates both *CeRə-* and *CRṼ-*, it is possible to trace back *-nā-* to *-ne-ā-*, or *-n-ā-*, also in the many cases when only *CeRə-* is known. But the starting-point *CeRṼ-* is an improbable assumption (see 3.2.1.2).

3.2.1.2 The full grade from $CR\bar{V}$ in *seṭ*-roots (and \bar{V} as root-enlargement)

Usually a *seṭ*-root has only one full grade form that is known, $CeR\bar{a}$ - (e.g. *uema*- 'vomit, feel sick': Skt *vāmiti*, Gr. ἐμέω for earlier *ἐμεμ (P 1146)), but there are also cases where two full grade forms, $CeR\bar{a}$ -, $CR\bar{V}$ - (e.g. *pelā*-, *plē*-, 'fill, be full', Skt *pāriman*- 'fullness': Lat. *plēre* 'fill', etc., see P 799 ff.) are attested. The relationship between the connected $CeR\bar{a}$ - and $CR\bar{V}$ - has been explained in two (or four) different ways. In the first place $CR\bar{V}$ - has been seen as secondary to $CeR\bar{a}$ - by \bar{V} being thought of as a later addition (root enlargement or suffix) or by seeing a metathesis $CeR\bar{a}$ - → $CR\bar{V}$ - (this perhaps only on a laryngealistic view: $CeRH$ - → $CReH$ -); in the second place it has been thought that $CeR\bar{a}$ - : $CR\bar{V}$ - depends on "Schwebeablaut" in a base $CeR\bar{V}$ - or on a combination of a root CeR - and a suffix eH both with quantitative ablaut ($C(e)R$ -(e) H -) in which combination only the stressed part of the base has retained the full grade vowel. — The alternation $CeR\bar{a}$ - : $CR\bar{V}$ - constitutes a part of a larger complex of problems which may be covered by the term "Schwebeablaut" used above. An unusually clear analytical outline, as far as I can see, of the history of research in this field is given in Anttila 1969:1 ff.

If the metathesis theory (see 1.3.10 Schmitt-Brandt) is accepted, and in the *seṭ*-roots is seen a development $CeR\bar{a}$ - → $CRe\bar{a}$ - — where-by nothing is said of the character of \bar{a} — the result will be an explanation of $CR\bar{V}$ - according to the laryngeal theory. And there are facts that seem to speak in favour of $CR\bar{V}$ - being secondary to $CeR\bar{a}$ - and of a development of metathesis type having taken place:

(1) A $CeR\bar{a}$ - alone is, even according to P, more than twice as common as a connected pair $CeR\bar{a}$ - : $CR\bar{V}$ -.¹ And there is reason

¹ Examples of $CeR\bar{a}$ - alone : *anā*- 'breathe' (P 38 f.), *arā*- 'plough' (P 62 f.), *domā*- 'tame' (P 199 f.), *eisā*- 'move violently and quickly' (P 299), *gūerā*- 'praise, glorify' (P 478), *kerā*- 'head, horn, top' (P 574 f.), *merā*- 'tear' (P 735 f.), *omā*- 'act energetically' (P 778), *petā*- 'spread' (P 824), *peḡā*- 'cleanse, simmer' (P 827), *senā*- 'prepare etc.' (P 906), *temā*- 'obscure' (P 1063 f.), *uēlā*- 'wool' (P 1139), *uema*- 'vomit' (P 1146). I also register $CeR\bar{a}$ - alone in the following cases: *gūerā*- 'devour' (P 474; where *gurō*- is erroneously presented on the basis of Gr. βρω- in βιβρώσκω, ἐβρω, βέβρωκα etc.), *temā*- 'cut' (P 1062 f.; here *tmā*- is also presented on the basis of Gr. material only).

to reject several of P's examples of this type of "Schwebeablaut" (see below).

(2) It seems difficult to find alternatives to metathesis as an explanation, once we have accepted that $CR\bar{V}$ - in the alternation $CeR\bar{\partial}$ - : $CR\bar{V}$ - is secondary to $CeR\bar{\partial}$ -. In any case " $CR\bar{V}$ - < $CeR\bar{\partial}$ - + the root-enlargement \bar{V} " seems difficult to accept. Still according to P, the cases of \bar{V} as a certain enlargement, i.e. as an unmistakable addition to an aniṭ-root (of the type $i\bar{a}$ - in, inter alia, Skt *yāti* 'goes' and Lat. *Jānus* 'the gate-keeper (porter) of heaven' and $i\bar{e}$ - in the word for 'year': Avest. *yārə* and Goth. *jēr* etc. both to the root *ei*- 'go') are few. And even if it is possible that there is a connection between the root-enlargement \bar{V} and the well attested \bar{a} and \bar{e} forming verb stems (of which see for instance Anttila 1969: 44 ff. and the literature quoted there), still it is only a possibility. Besides the zero grade of $CeR\bar{\partial}$ - + \bar{V} ought to have given $CR\bar{R}$ - (i.e. Gr. *CaR*-, etc.; see 3.2.2.9).¹

In Anttila 1969, however, a treatment of the "Schwebeablaut"-complex is met with that seems to render the metathesis theory unnecessary.

In the first place Anttila considerably diminishes the number of cases with an assumed PIE alternation between state I and state II. In many cases the alternation has arisen through one of the full grade forms, chiefly state I, having been created through analogy in some particular dialect. The assumption PIE "Schwebeablaut" is partly based on a misconception, too. This is the case chiefly concerning Gr. $CR\bar{a}$ -, $CR\eta$ -, $CR\omega$ -, which may in principle always originate in $CR\bar{R}$ - (see 3.2.2.9 and Anttila 1969: 67 ff.).

The remaining alternations between two full grade forms which have existed, or may have existed, already in PIE, are explained by Anttila in the following way:

(1) We have to do with a combination of a root CeR - and a suffix eR -, both with the ablaut: $C(e)R$ -(e) R -; cf. 1.3.1.3 Benveniste.

(2) In connection with derivation a state I has, by analogy, been created from the zero grade form of an originally isolated "state II".

¹ Cf. Anttila 1969: 5.

No cases of the "Schwebeablaut" $CeR\bar{a} : CR\bar{V}$ - are referred to (1), but many to (2), for instance $pel\bar{a} : pl\bar{e}$ 'fill, be full' (P 798 ff.), $\hat{g}en\bar{a} : \hat{g}n\bar{o}$ 'recognize, know' (P 376 ff.).

If Anttila 1969, which I find well grounded and sound, is followed thus far, the need of the metathesis theory may be said to be eliminated.

Of course there are still a few cases of $CeR\bar{a} : CR\bar{V}$ - which do not represent to Anttila an alternation between two full grade forms, but whose analysis can not in these cases be (with equal ease) accepted by a traditionalist. This is the case concerning what is by P denoted $\hat{k}er-$, $\hat{k}er\bar{a}-$, $\hat{k}r\bar{e}-$ 'grow' (577), $pet-$, $pet\bar{a}-$, $pt\bar{e}-$, $pt\bar{o}-$ 'fly, fall', $ster-$, $ster\bar{a}-$, $str\bar{e}-$ 'streak, ray' (1028), $ter-$, $ter\bar{a}-$ and (alternating with $teri-$ and $tr\bar{i}$) $tr\bar{e}i-$ (with a dropped i which, according to P, is found in OHG $dr\bar{a}t$, On $\hat{p}r\bar{a}\ddot{o}r$), $\hat{u}er-$, $\hat{u}ere-$ (!), $\hat{u}r\bar{e}-$ 'feierlich sagen' (1162). At least partly Anttila's analysis is decided by the fact that he sees a discrepancy between the kind of H in $CeRH-$ and the vowel colour of \bar{V} . This support for here seeing a root-enlargement, independent of \bar{a} , in \bar{V} is not available to a traditionalist. But the possibility of a root enlargement still exists. I believe that \bar{a} may be seen as facultative and \bar{V} as an addition to the $ani\bar{t}$ -form. In any case these cases do not suffice to prove the metathesis theory.

So much well-grounded doubt has been thrown on the metathesis theory that it can not serve as proof of the assumption: $CR\bar{V}$ - in cases of alternation $CeR\bar{a} : CR\bar{V} < CeR\bar{a} \rightarrow CRe\bar{a}$.

As regards \bar{V} as a suffix or root-enlargement, that category is strengthened by Anttila's way of reasoning. If it is considered desirable to have some idea about its origin, we may guess that it has arisen through cutting radical $CR\bar{V}$ into $CR-\bar{V}$. And if, again, we have the right to speculate upon the further fate of \bar{V} , it is tempting to see the \bar{a} and \bar{e} that form verb stems as developments of it.

3.2.1.3 *Skt lengthening of short vowels at the end of words or morphemes*

In his work of 1956 (339 ff.) Kuryłowicz seems to remove the support for his earlier assumption that compounds and juxtapositions in Vedic such as $\acute{a}p\bar{a}c-$, $\acute{a}sat-$, $an\bar{u}r\bar{u}dh-$, $s\bar{u}n\bar{a}ra-$, $ab\bar{h}i$

naraḥ represent cases of short vowel + (reflex of) *H* before consonant → long vowel.

Kuryłowicz still thinks that his derivation of the long vowel is correct for a limited group of words (which he has presented earlier) but that this can not be the source of the extensive lengthening of short vowels at the end of words and morphemes that has taken place. I will not attempt to determine whether Kuryłowicz' ingenious morphological-phonetical explanation of the secondary vowel length of reduplicates such as *jījana-*, *jāgana* (perf.), and compounds like *dirghā-dhiyaḥ*, *dhāngyā-kṛtaḥ* is correct (1956:340 ff.). But I wish to discuss the following from his exposition.

(1) The principal rule seems to be that short vowels are lengthened before single consonants in the beginning of short syllables. There are exceptions both before second members which, according to the laryngeal theory, began with an *H*, and before those that did not.

The explanations that Kuryłowicz gives of the long vowels of the latter category (1956:343 ff.) are partly, I think, too "cunning" to be convincing that the situation is not this instead: there are exceptions from the principal rule for different, at least partly unknown, reasons. In other words I think there is room for the assumption, for instance, that long vowels throughout, whatever follows, in cases like *āpāc-*, *anūrūdh-*, etc., depend on analogical uniformation.

(2) The only examples given by Kuryłowicz (1956:339) of a fundamentally irregular long vowel where *H* is thought to be the cause, is *apī-jū-*, *vasū-jū-* (with *api* → *apī* and *vasu* → *vasū* in spite of the following long syllable). But the assumption *jū- < Hjū-* is based on the highly speculative assumption that "*geu-*, *geuə-*" 'drive etc.' in Skt *junāti*, etc., (P 399) is to be connected with *aḡ-* 'drive, etc.', (Lat. *agere*, Gr. *ἄγω*, etc., P 4 f.). It may further be observed that in Kuryłowicz' group of long vowels that he considers probably (or possibly) explained by the position before an original *H-*, is included a case where *H* is assumed on the basis of the assumption: all initial *V*'s < *HV-*. This is the case concerning *avāyati* (*ava* + *yati*) and *āyan* (the 3rd p.pl. with augment) to the root *ei-* 'go'.

It is my opinion that the "proof" discussed here should be dismissed from the discussion.

3.2.1.4 Long vowels in reduplication-syllables

Even for a convinced laryngealist it must seem adventurous to reckon with special cases of $eH \rightarrow \bar{V}$ in the Gr. perf. with so-called Attic reduplication, e.g. ἐλήλουθα, ὅλωλα, ὅπωπα as Kurylowicz does (see 1.3.1.1) and those who follow him (among others Beekes, see 1.3.1.11). ἐλήλουθα is derived < *Elelouth-*, whose reduplication-syllable *Ele-* is assumed to contain the two first consonants of the root *Eleudh-* (in which *E-* is thought to be confirmed by the prothetic vowel in Gr. fut. ἐλεύσομαι and by Skt *anūrúdh-*, etc.; see 3.2.1.3) and to develop *E* into a so-called prothetic vowel. ὅλωλα (to *olə-* 'smell', laryngealistically *OelE-*) and ὅπωπα (to *ok^u-* 'see; eye', laryngealistically *Oek^u-*) must, together with a few others, be explained as analogical to the type ἐλήλουθα. — There is no principal support for Beekes' attempt to explain ὅλωλα as a "regular" Attic reduplication *OleOl-* to a full grade form (state II form) *OleE-* (traditionally **lē-*) corresponding to *OelE-* (state I), not otherwise attested. A real "Schwebeablaut" mechanism may be doubted, and we have no right to see single *CReC-*'s as isolated members of pairs *CeRC-* : *CReC-* (cf. 1.3.1.10 Schmitt-Brandt and 3.2.1.2).

The fact that the explanation by means of the laryngeal theory only covers some of the cases and that the assumption of a repetition not only of *H* but of *H*+a consonant following is rather bold (in spite of examples of a repetition of *sC-*), makes it an urgent task to find another explanation of Attic reduplication.

3.2.1.5 Shortening of final long vowels before initial vowels and in pauses

The factors that have been assumed to cause short vowels+*H* not developing into long vowels before initial vowels or in pauses (above all) in Vedic (see 1.3.1.10 Kuiper, 1.3.1.11 Beekes) must have been able to cause an actual shortening of long vowels in the same positions. In other words I should like to explain the situation pictured by Kuiper in terms of long vowels being shortened before vowels and in pauses. In the latter position it is, most probably, a case of prosodic analogy: since syllables of the type *VC* were short in pauses, long vowels were shortened in the same position.

If I have understood the matter rightly, there is nothing to

prevent turning Kuiper's reasoning around in this way. One thing that would prevent it would be an exceptionless occurrence of final long vowels which could not, according to the laryngeal theory, be derived from short vowels+*H*. No examples have been presented of such decisive long vowels and probably no relevant material exists either.

Lindeman (1970: 58) has pointed out that the laryngeal theory itself causes certain difficulties to Kuiper's idea.

If *H* was retained finally after vowels in pre-literary Indic it may just as well have been retained initially before vowels. Disregarding the thought presented by Sapir that contiguous *H*'s may have left the consonantal trace *k* (cf. 3.2.2.6), a -*VH* or -*iH* or -*uH* before a prevocalic initial *H* might in the first place have given -*Ṽ*, -*ĩ*, -*ũ*. This is especially a problem to those laryngealists who assume that all PIE roots that, according to the traditional view, begin with a vowel, originate in *He-*.

3.2.1.6 *Hiatus in Skt*

Unless hiatus in Vedic in cases like *yāntu*, *pāntu*, *déṣṭha-*, *bhās-*, -*pām* and -*pās*, where the metre calls for *yaantu*, *paantu*, *deiṣṭha-*, *bhaas-*, -*paam*, -*paas* (see 1.3.1.1 Kuryłowicz) is to be understood as an innovation throughout, Kuryłowicz' explanation (see 1.3.1.1) may be exchanged for the following: This hiatus is a relict, a retained intermediary stage in the development long vowel+short vowel → long vowel only. Only the acc. sing. -*aam* of the root noun is an innovation, after the pattern of the consonant stems.

A problem both to the laryngeal explanation and to the alternative mentioned here is the fact that the female *ā*-stems evidently do not have hiatus forms in connection with (initial) vowels in endings or suffixes. This contrast to the root nouns of the type -*pā-* may be related to the fact that the formants of the *ā*-stems are not subject to ablaut, while in the root vowels in question long vowels alternate with *ə* (which drops out before vowels). For the laryngealists to assume that the development into long vowels has taken place earlier in the *ā*-stems, early enough to enable the hiatus to disappear, will be arbitrary. On the other hand, of course, this possibility exists and, to a certain extent, throws doubt upon the non-laryngealistic alternative.

Perhaps the root nouns of the type -*pā-* contrast to the *ā*-stems

in having hiatus forms — as also has *yāntu*, etc. — owing to the inflectional resemblance between *-pā-* etc. and the root nouns ending in consonant: gen. sing. *pad-āḥ* (from *pād-* ‘foot’) : *-p-aḥ*, dat. sing. *pad-é* : *-p-é*, loc. sing. *pad-i* : *-p-i*.

However, I admit that the laryngealistic explanation of the *yaantu* etc. is somewhat simpler and more elegant, but this does not mean that the phenomenon discussed needs *H*.

3.2.1.7 Primary *ə* as a suffix or an ending?

I will here discuss a few cases where a primary *-ə*, i.e. an *ə* that is not the result of a reduced \bar{V} , has been interpreted, or, at least, may be seen, as an ending or suffix which in combination with *e* or *o*¹, has given \bar{a} .

3.2.1.7.1 $\bar{a}/\bar{ə}$ in the neut. pl. and in stem formants (possibly) related to it

Chiefly according to Brugmann 1911:231 ff. I find it most natural, or at least justifiable, to reckon with the following distribution in PIE of distinctive features of the neut. pl. and acc. nom.: \bar{a} in *o*-stems, \bar{i} , \bar{u} in *i*- and *u*-stems respectively, $\bar{ə}$ in consonant stems. This makes it possible to see $\bar{ə}$ throughout as a constituent of the category and to derive $\bar{a} < e/o + \bar{ə}$ and \bar{i} , $\bar{u} < i\bar{ə}$, $u\bar{ə}$. By this an interpretation of \bar{V} according to the laryngeal theory may be said to be confirmed at least in one point.

But there are circumstances that render this interpretation of the relationship between \bar{a} (\bar{i} , \bar{u}) and $\bar{ə}$ in the neut. pl. unnecessary:

(1) The historical picture is not entirely in accordance with the assumed PIE distribution of \bar{a} and $\bar{ə}$ in the neut. pl.; among other things Gr. has throughout $-\alpha$ ($< \bar{ə}$) and Gmc almost exclusively, or possibly solely, reflexes of PIE \bar{a} (see Brugmann 1911:231 ff.).

This fact still leaves the possibility open that \bar{a} and $\bar{ə}$ were not even in PIE entirely confined to the *o*-stems and consonant stems respectively.

(2) It seems to be generally accepted (and is probably unavoidable) that the neut. pl. is as to its origin a collective which on its part most probably is related to the abstracts with \bar{a} but which

is also identical with the stem formant in the fem. \bar{a} -stems.¹ Through this it becomes important, concerning the relationship between $-\bar{a}$ and $-\bar{a}$ in the neut. pl.: (a) that not even the collective — or fem. — indicating $-\bar{a}$ is always found beside o -stems,² (b) that the ablaut $\bar{a} : \bar{a}$ seems to be confirmed in $i\bar{a}/i$ -stems (and $u\bar{a}/u$ -stems) whose \bar{a} should be = the single suffix \bar{a} .

Against the background of (1) and (2) it becomes possible to see $-\bar{a}$ (with the zero grade \bar{a}) as the original distinctive mark of the neut. pl. A secondary coupling of $-o$ and $-\bar{a}$ is understandable. As a basically independent derivation $-\bar{a}$ has had great possibilities of occurring beside the frequent $-o$, and through this a basic condition for their coupling is at hand.

In this connection it should be mentioned that the interpretation of Gr. $-\alpha/j\alpha$, $-va/Fa$ vis-à-vis the $-\bar{i}$, $-\bar{u}$ of other IE dialects in the fem. $i\bar{a}/i$ - and $u\bar{a}/u$ -stems³ and in the neut. pl. does not affect the conclusion arrived at above. The question whether the Gr. peculiarity is an innovation or a relict (see Beekes 1969: 155 ff.) may therefore be left open. For under all conditions we must reckon with a development $i\bar{a}$, $u\bar{a} \rightarrow \bar{i}$, \bar{u} , irrespective of how \bar{a} is interpreted. And the occurrence or absence of the contraction of i or u + an originally vocalic \bar{a} may just as well be thought of as a vocalization or non-vocalization of H .

3.2.1.7.2 The nom./acc. dual. $-\bar{o}(u)$, $-\bar{i}$, $-\bar{u}$

To judge from the information of handbooks⁴ the PIE distinctive mark of the nom./acc. dual. are the following:

in \bar{o} -stems: $-\bar{o}(u)$

in i - and u -stems: $-\bar{i}$ and $-\bar{u}$ respectively

in fem. and masc. consonant stem: $-e$

in neut. consonant stems: \bar{i}

in \bar{a} -stems: $-\bar{a}$ and $-\bar{i}$ (?)

At least some laryngealists (see 1.3.1.10 Kuiper, Sturtevant 1942: 8) see in $-\bar{a}$, $-\bar{i}$, $-\bar{u}$ the effect of a (originally collective?) suffix $-H$.

¹ See Brugmann 1911: 231, Meillet 1934: 284 f.

² See inter alia Brugmann 1906: 148 ff., Meillet 1934: 284.

³ On the $i\bar{a}/i$ -stems see among others Brugmann 1906: 211 ff.

⁴ See chiefly Brugmann 1911: 195 ff., Meillet 1934: 297, Debrunner—Wackernagel 1930: 45 ff., Schwyzler 1953: 557.

If this were the case $-\partial$ would be expected in consonant stems, where the suffix would appear alone and in the form $-\bar{H}$ ($-\partial$). In stead we find partly $-e$, partly $-\bar{i}$ in the consonant stems.

It is logical to interpret $-\bar{o}$ and $-\bar{i}$, $-\bar{u} < o+e, i+e, u+e$ (with an expansion of $-\bar{i}$ as early as in PIE?) as in Debrunner—Wackernagel 1930: 48, 49 f. It is true that we would then in the first place expect to find “Schleifton” in Lith. and a circumflex on $-\bar{o}$ in Gr. (cf. Schwyzer 1953: 557), but it is hardly possible to prove that $o+e$ as final sounds did not have the accent “Stosston”.

It has been suggested (see Schwyzer 1953: 557) that dual. $-e$ is an innovation in analogy with pl. $-es$ following the correspondence in the o -stems between pl. $-\bar{o}s$ and dual $-\bar{o}$. This derivation of $-e$ is hardly probable. Observe that $-\bar{o}s$ and $-\bar{o}$ have different syllabic accents which will have rendered the conception of the pl. nom. $-\bar{o}s$ as=dual. $-\bar{o}+s$ difficult.

3.2.1.7.3 Instr. sing. $-\bar{a}$, $-\bar{i}$, $-\bar{u}$

I will here only (on the basis of handbooks¹) state that the historical facts seem to point to the instr. sing. of the o -stems having had the distinctive marks $-\bar{o}$ or $-\bar{e}$, of the i - and u -stems $-\bar{i}$ and \bar{u} respectively, while it seems uncertain which vowel suffix the consonant stems had in PIE (or if they had a vowel suffix at all).

Possibly the consonant stems, so important for the deciding of the ending, had $-e$; Méillet (1934: 295) sees an original instr. in the Lat. abl.-instr. $-e$ in *patre* etc. If this is the case $-\bar{o}$, $-\bar{i}$, $-\bar{u}$ may possibly be derived $< o+e, i+e, u+e$ (cf. 3.2.1.7.2).

An $-\partial$, characteristic of the consonant stems, may hide itself in some Gr. adverbs with $-\alpha$, $\bar{\alpha}\mu\alpha$, $\bar{\alpha}\rho\alpha$, $\bar{\alpha}\nu\acute{\alpha}$ (see Schwyzer 1953: 622 f.). If this is the case, $-\bar{o}$, $-\bar{e}$, $-\bar{i}$, $-\bar{u} < -o\partial, -e\partial, -i\partial, -u\partial$ (laryngealistically $-oE, -eE$ etc.) will be the most natural explanation (cf. 3.2.1.7.1).

Even if it is considered that the consonant stems give us no help at all in analyzing the instr. sing. $-\bar{o}$, $-\bar{i}$, $-\bar{u}$, $< -o\partial, -i\partial, u\partial$ is of course a possibility, but it is no more than that.

¹ See chiefly Brugmann 1911: 188 ff., Méillet 1934: 294 f., Debrunner—Wackernagel 1930: 34 ff., Schwyzer 1953: 550 f.

3.2.2 Other assumed traces of H

3.2.1.1 *The skewed distribution of the vowels a and o^2*

Saussure and with him at least some earlier laryngealists see the fact that, according to their view, a and o^2 , and also \bar{a} and the so-called primary \bar{o} , with help of the assumed entities A resp. O , may be derived from the vowel e , so dominating in the PIE vowel system, as an argument in favour of the laryngeal theory.

This possibility of reducing the number of PIE fundamental vowels does not give any support to the laryngeal theory (see 3.1).

The question I will here try to decide upon is this: Can all cases of PIE a and o^2 , which are the immediate result of comparison be seen as fundamental or is there any special reason to agree with the laryngealists on this point? In this connection it will be necessary to compare a and o^2 with corresponding long vowels.

3.2.2.1.1 On a (and \bar{a})

After studying handbooks, chiefly P, and also more specific texts, chiefly Saussure 1879:55 ff., Kuryłowicz 1956:187 ff., Wyatt 1970:60 ff., I will below present the linguistic material that may be regarded as in each case the most relevant to the question raised.

Regarding the criteria for PIE a , I remind the reader that:

(1) The principal rule for the development of the PIE \bar{o} is that, in so far as it does not disappear, it coalesces with a . The most important exception is $\bar{o} \rightarrow i$ in Indo-Iranian.

(2) a is retained in Gr., Lat., Arm., Celtic (and Toch.), but for the rest it coalesces with PIE o or, in Indo-Iranian, PIE e and o .

If "normal" requirements are applied PIE a will be considered quite confirmed, if Gr. etc. a corresponds to Indo-Iranian a or has an ablaut alternation with \emptyset . But it is also natural to see Gr. etc. a without correspondence in Indo-Iranian as evidence of PIE a as long as nothing indicates \bar{o} on the basis of what we know of the occurrence of this vowel (or if a does not seem to alternate with e or o).

In the few cases with alternation $\bar{a} : a$ that I cite (from P) \bar{a} may be seen as a lengthening of a . It occurs in positions known

to indicate ablaut lengthening or in positions where nothing speaks more in favour of a normal grade than a lengthened grade.

(A) Radical *a*

(1) Radical *a*-

In several cases the following criteria are found:

a in "Les langues du Sud" (Gr., Italian, Arm., Celtic, or one, or two of these) as well as in Indo-Iranian or in ablaut with \emptyset :

aġ- 'drive' (P 4 ff.) — An extensive and well attested root in the verb Skt *ájati*, Gr. ἄγω etc., and also in the noun formations *aġmṛ*, *aġmes* 'march, course', *aġes-*, *aġs-* 'ear, axis', *aġ-rā* 'baiting, hunt', *aġ-ro-* 'field'.

agos, *āgos* 'error, fault, sin' (P 8)

aġh- 'pregnant animal' (P 7)

aidh- (: *idh-*) 'burn, light' (P 11 f.)

ais- (: *is-*) 'wish, demand, seek' (P 16)

al- 'grow, make grow, nourish' (P 26 f.)

al- 'grind' (P 28 f.)

alg^h- 'deserve' (P 32 f.)

ambhi (: *mbhi*) 'about' (P 34)

anə- 'breathe' (P 38 f.)

an-, *anu-*, *anō* (: *nō*) "an einer schräger Fläche hin, hinan" (P 39 f.)

anġh- (: *ng^h-*) 'narrow, constrict' (P 42)

ank-, *ang-* 'bend' (P 45 f.)

ant-, *anto-* 'front brow', to which the prep. and adv.

anti (: *nti*) (P 48 f.)

ap-, *āp-* 'water, flood (river)' (P 51 f.)

ap-, *āp-* 'brittle, hurt' (P 52)

apo (: *pō*), *apu-* (: *pu-*) 'from' (P 53)

ar- 'allot' (P 61)

arġ- (: *rg^h-*) 'shining, white' (P 64 f.)¹

at- 'go, year' (P 69)

ati, *ato-* "über etwas hinaus" (P 70 f.)

atta "Vater, Mutter" (P 71)

au-, *aue-* 'from' (P 72 f.)

au- 'plait, weave' (P 75 f.)¹

¹ Cf. 3.2.2.3.

au- 'covet' (P 77 f.)

aṃis, āṃis 'obvious' (P 78)

aug- (: *ug-*) 'increase' (P 84 f.) ¹

Regarding the remaining more than 100 title-forms with *a-* it is also reasonable to see PIE *a* (not *ə*) in most of the cases; there is not really any reason to suspect *ə* in a case like *arə-* 'plough' (Gr. ἀρόω, ἄροτρον, ἄροτρον, Lat. *arāre*, Lith. *ariù, árti* 'plough' etc., but not found in Indo-Iranian, see P 62 f.)

(2) Radical -a-

Gr. *α* and/or Italian *a* etc. corresponding to Indo-Iranian *a* or alternating with zero is found in the following cases:

bhag- 'apportion' (P 107)

daiyēr 'brother-in-law' (P 179)

daḱru- ~ aḱru- 'tear' (P 23, 179) ²

ḡhans- 'goose' (P 412)

ḡag- 'give (as an offering)' (P 501 f.)

ḱad- 'fall' (P 516)

ḱad- 'shine, show off, distinguish oneself' (P 516 f.)

kaiyrt, kaiyrt 'hollow, deft' (P 521)

kal-, kali-, kalu 'beautiful, healthy' (P 524)

kars- 'scratch, card, groom' (P 532 f.)

ḱas-, ḱas-no- 'grey' (P 533)

ḱat- 'fight' (P 534)

las- (: *ls-*) 'be greedy or unbridled or averse' (P 654)

mat- 'hoe, flail' (P 700)

nas- 'nose' (P 755)

pasto- 'fixed' (P 789)

sal- (: *sl-*) 'salt' (P 878 f.)

sap-, sab- 'taste, perceive' (P 880)

saus- (: *sus-*) 'dry' (P 880 f.)

taus- (: *tus-*) 'still, quiet, satisfied' (P 1056 f.)

tṃakos 'skin' (P 1099)

(B) Non-radical *a*

The only certain example of non-radical *a* in PIE seems to be the endings *-a, -tha* in the 1st and 2nd p. sing. perf. (Skt *véda, véttha*, Gr. οἶδα, οἶσθα).

¹ Cf. 3.2.2.3.

² It stands to reason that the forms with and without *d* are connected, though the relationship between them is not clear.

When the above material with (what seems to be) PIE *a* is surveyed, the following catches the eye as particularly noteworthy.

(1) Radical *a* seems to have a skewed distribution. Initially it is well attested, about as common as *e* (: *o*¹), while it is medially notably poorly represented. If we confine ourselves to the most certain cases, there is actually more evidence of *a*- than of *-a*-. If all P's titles with *-a*- are included, the relation *a*- : *-a*- is about 2:3. To this should be compared that, on the whole, *-V*- is about 10 times as numerous as *V*- among P's title-forms.

(2) The material concerning *-a*- consists to a striking degree of isolated words, not of ramified roots. Part of the material with radical *a*, and especially *-a*-, seems to consist of (possible) "Lallwörter" or onomatopoeic words or of expressives. *a* seems to be almost entirely wanting in such central parts of the vocabulary as numerals, words for parts of the body (see, however, *nas*-), early relationship-words (see, however, *daiṇēr*) and pronouns.

(3) *a* seems to have few or no morphological functions and to take no part in word formation. Indeed, the perf. endings *-a*, *-tha* are the only certain non-radical uses. This seems to be a different kind of skewed distribution to that mentioned above. Further, the ablaut *a* : *Ø* is much less frequent than the ablaut *e* : *Ø*.

(4) There is quite a marked discrepancy between *a* and fundamental *ā*. Medial *a*, as mentioned, is fairly uncommon, while the radical *ā* is only found in medial position where it is well attested compared to other long vowels, has a morphologically important alternation with another vowel (*ə*) and plays a part in word formation (cf. 3.1). — I will at once remark, however, that parallel use of corresponding short and long vowels is, of course, not necessary. But what is said here in 4 should be noted, however.

The points (1)–(3) on the whole mean an acceptance of Kuryłowicz 1956:187 ff. (and Meillet 1934:99, 166 ff.) concerning facts. I agree with Kuryłowicz that the distribution of *a* is remarkable. Even if we are exceedingly generous concerning the criteria for PIE *a* it is impossible to avoid the question: Why is *a*- compared to *-a*- so much more common than *e*- (: *o*¹-) vis-à-vis *-e*- (: *-o*¹-)? The difference is so striking that it can hardly be dismissed with the argument that there are no completed statistics possible to use concerning PIE. And the questioning mind is not

satisfied, either, by an assertion that there is nothing to say that *a-* should be related to *-a-* in the way a certain other *V-* is, or other *V*'s together are, to a (corresponding) *-V-*. There is here need of a thorough investigation of the typological facts in the field. I have not allowed myself time to undertake an investigation of this kind. Therefore I will have to be satisfied with the conclusion that it seems a priori more plausible that at least most of the differences that there are in this respect emanate from historical development than from a fundamental difference in use, caused by differences in vowel colour.

A special explanation why *a-* is so frequent and *-a-* so rare (and to a noticeable extent appears in special word material) should therefore be welcomed.

The laryngeal theory offers possibilities of an explanation of this kind. Probably justice is best done towards the theory by the following moderate use of it on this point (and not by assuming that PIE *a* has entirely arisen through the effect of *H*):

A PIE *a* is typologically to be expected, but to judge from the rarity of radical *a* in medial position, a reduction of *a* (that increased the number of *e*'s?) has taken place at least medially. That *a-* is at least as frequent as *e-*, while the proportion between medial *e* and *a* is about 10:1, may, further, be explained by the effect of *A*, either that a development $e \rightarrow a$ has taken place in the position after *A* (the usual laryngealistic assumption) or by original *a* being retained there (cf. 1.3.1.9 Schmitt-Brandt).

This is not only a displacement of a distributional problem from PIE *a* to *H*. It is reasonable to assume that roots or morphemes with *HeC-* or *HeR-* were at least more common than those with *CHeC-* or *RHeC-* (or *CHeR-*). Only if *H* has the same character as known PIE *R*'s (*r*, *l*, *m*, *n*, *ṛ*, *ḡ*) a (more frequent) occurrence of initial *CH-* is to be expected. But is there any known linguistic sound to insert as an equivalent member of the known group *R*? And the vowel colouring effect ascribed to *H*, seems to point in another direction (see inter alia 1.3.1.12 Keiler).

On the other hand there should be nothing to prevent *H* from appearing as a final sound and the chance that it should be found in *CeHC-* (*ReHC-*) should be greater than in the type *CHeC-* (*RHeC-*). Roots of the type *CṼ-*, *RṼ-* (and *CṼC-* etc.) are therefore typologically expected to a laryngealist.

I will present the following non-laryngealistic alternatives to the explanation of the peculiarities in *a* pointed out.

(1) The weak position of *a*, *-a-* and *a-* taken together, depends on an extensive phonetic development $a \rightarrow e$.¹ If the strong position of initial *a* is, for the time being, disregarded, more general explanations may be given of the fact that the sound development was not total; for instance the powerfulness of the sound development has varied in different strata of pre-IE (for pre-IE, too, will have been stratified to a certain extent), and on the whole there has been an incomplete effect of it in "Lallwörter", expressives, etc.

On the other hand a more specific explanation is required of the fact that *a-* should have escaped being affected, or only have been slightly affected, by the sound development. Possibly there can have been a tendency towards lengthening of *a-*, which did not go so far as to a retained \bar{a} -, but was still able to hinder a transformation into an *e*-vowel in the same way as \bar{a} -, to judge from its comparatively strong position, has not (to any great extent) been affected by a correspondence to the development $a \rightarrow e$. In Swedish examples are found of a special lengthening of initial old *a*: *åka*, *åker*, *åter* (see for instance Hellquist 1939 under these words) and old *o*: in *ok*, *ord*, *orm*, *ost* (see for example Hellquist under these words), in Swedish dialect also *orka* (Götlind 1940—41:178). Cf. also: "Anlautendes *o* scheint im Brit. gelegentlich zu einem \bar{o} gedehnt worden zu sein" (Pedersen 1909: 33).

(2) *a-* is, at least to a considerable degree, an innovation. We have to do with a phenomenon in early PIE or pre-IE (which may have given initial *e-* and o^2 , too) of a similar type to the later prothesis in Gr. and Arm. (behind which it is not necessary to see *H*; see 3.2.2.2). — It may be worth remarking that in about 3/4 of P's titles with *a-* the vowel is followed by *R*, with regard to the fact that prothetic vowels in Gr. and Arm. also chiefly appear before *R*. This early prothesis may be assumed to have taken place after a development $a \rightarrow e$ for which reason its *a* has been preserved. The question is then, from where the practicers of the language have taken this prothetic *a*. Perhaps it is of the same kind as the fairly frequent *a* in "Lallwörter", expressives, etc.?

¹ Cf. 1.3.1.9 Schmitt-Brandt.

It need hardly be said that we have to do with very hypothetical alternatives to a laryngealistic explanation of the problems concerning PIE *a*. It may be asked whether it is any use speculating over what developments can have led to the picture of PIE given us by comparative linguistics. I have here done so in order to show that if one does attempt to explain the scarcity, totally seen, and the remarkable distribution of PIE *a*, the effect of an *a*-colouring *H* is not the only alternative.

Conclusion: an *a*-colouring *H* (*A*) is on this point quite welcome but still not indispensable.

Finally I wish to remark that a critic of the explanation of *a*, *ā* and fundamental *o* (*o*²) and *ō* by means of *H* can not, however, find support in the counter argument presented by Satya Misra against that explanation: the ablauts *a* : *o*, *ā* : *ō* and the ablaut *a* : *ā*. (See 1.3.3.)

An apophonic alternation between *a* and *o*, which may have occurred, is consistent with the laryngeal theory. It may be (and has been) assumed that *o*¹ and ablaut-*ō* have not been affected by contact with *A*, or that the ablaut *e* : *o* and an ablaut *a* : *o* has taken place after the change in vowel colour caused by *H* (see 1.3.1.14.3.5). And in no way is the occurrence of a few cases of alternation *a* : *ā* inconsistent with the explanation of *a*- < *e* (or original *a*) in contact with *A*. Apophonic lengthening may have taken place before as well as after the loss of *H*.

3.2.2.1.2 On *o*² (and fundamental *ō*)

The problem situation here differs considerably from that concerning *a*. There the task is to delimit the exclusive entity *a* (with the main problem: when *a*, when *ə*?) and then to test whether the picture given by comparative linguistics requires an *a*-colouring *H*. Here it is in principle this: firstly, to decide whether it is possible in the qualitatively indistinguishable mass of *o*'s to delimit two historical entities on the basis of their use, the apophonic *o* (*o*¹) and the fundamental *o* (*o*²)¹; secondly, if the answer to the first question is in the affirmative, to discuss whether an *o*-colouring *H* is needed for the understanding of the picture of *o*².

¹ Saussure and one or two other scholars have on insufficient grounds traced a qualitative contrast between *o*¹ and *o*² (see Sturtevant 1938: 104 ff. and literature cited there).

The establishing of criteria for o^2 (i.e. that section of the mass of o 's that seems to be something other than o^1) may accordingly be said to consist of two "steps". A PIE o must (1) be attested by "normal" comparative criteria (especially the distinction of o from a and from \bar{a} must be clear), (2) it must occur when an apophonic o is not to be expected.

The material of apparently isolated PIE o (found in P) that satisfies requirement (1) I will, with regard to requirement (2), divide into three groups.¹

(a) Cases where there is positive support for the assumption that o is not an apophonic o : The full stage e is the rule in the word formation type, when there is an e -root. This is the case, as far as I can see, only concerning radical o in primary verbs (*od-*, *ok̑-*, *goṽ(ə)-*, *ghou(ə)*, etc.; see further the list of material below).

(b) Cases where there is no certain support either for the assumption that the o -vowel is fundamental or for the assumption that it is an isolated apophonic o .

This uncertainty depends either on the fact that the word formation type in question, when there is an e -root at hand, shows both radical e and radical o (o^1), or that there is no word formation type (decided in the sense we are concerned with) that allows us to say anything about the vowel colour to be expected in the root vowel. The first is especially the case concerning root nouns such as PIE *ond-*, *os(t)h-*, etc., *dous-*, etc.,² and several probable, or at least possible, cases of noun formation with suffixes ending in $-o$ or $-\bar{a}$, e.g. *orbho-* (*or-bho-*?), *uobhsā* (*uobh-sā*?), *porko-* (*por-ko-*?).³ The latter is the case concerning cases like the numeral *oktōu* and the adverb *kom*.

(c) Cases where the word formation type speaks in favour of an isolated apophonic o . To this group have been assigned nouns that (in the first place) must be considered to be o - or i -derivations (not derivations with suffixes containing o or i): *bhoso-*

¹ I pass by in silence those — usually obvious — reasons that, on the basis of requirement (1), have occasioned a sorting out of the material of P (and other handbooks) with apparently isolated o .

² See, inter alia, Kuryłowicz 1956: 48.

³ This is established above all on the basis of the presentation of Brugmann. It should, however, be remarked that I have in no way exhaustively investigated this question. Possibly a more extensive evaluation would offer the possibilities of a finer gradation. I believe, however, that this rather rough division is sufficient for my aim.

'night' (P 163), *bhorg^uo-* 'harsh, unfriendly' (P 163), *koro-* (and *korjo-*) 'war, warlord' (P 615 f.), *mono-* 'neck, throat' (P 747 f.), *oqi-* 'sheep' (P 784), *poti-* 'master, husband' (P 842), and *koino-* 'grass' (P 610), which in the first place should be analysed as *koi-no*. This analysis, the one closest at hand, of the material in question, brings us to word formation types wherein the ablaut grade *o* is the rule in material that can be derived from an attested root. It must, then, be methodically most correct not to attribute any evidential value to the material under (3). The mere absence of a related *e*-grade (according to the handbooks) can hardly justify us in doing this.

On account of the decisions made above only the groups (1) and (2) appear below in the list over material containing *o*². There is no need of a similar division of the meagre relevant material with non-radical *o*, set forth separately. — Concerning the material with *ō* I refer to 3.1.

A. Radical *o*²-

- (1) *od-* 'smell' (P 772 f.)
- ok^u-* 'see, eye' (P 775 ff.)
- oktō(u)* 'eight' (P 775)
- ol(e)-* 'destroy' (P 777)
- ong^u-* (: *ŋg^u*) 'anoint' also in *ong^uen* 'ointment' (P 779)
- ond-* (: *ŋd-*) 'stone, mountain' (P 778)
- oner-* 'dream' (P 779)
- op-* 'work, achieve'; especially in *opos* 'work' (P 780)
- orbho-* 'orphan' (P 781 f.)
- orghi-* (: *rghi-*) 'testicle' (P 782)
- ost(h)-*, *ost(h)i-*, *ost(h)r(g)-* 'vertebra' (P 783)

B. Radical *-o*²-

- 1. *gou(ə)-* (: *gū-*) 'call, cry' (P 403)
- ghou(ē)-* 'perceive, pay regard to' (P 453)
- ghyoig^u-* (: *ghyig^u-*) 'shine, light' (P 495)
- kob-* 'fit, succeed' (P 610)
- ?*lou(ə)* 'wash' (P 692)
- 2. *dous-* (: *dus-*) 'arm' (P 226)
- ghoilo-* (: *ghil-*) 'impetuous, reckless, etc.' (P 452)
- gol-* 'branch, twig' (P 403)
- koksā-* 'notation for part of the body' (P 611)
- kol(ě)ḱ-* 'glue' (P 612)

kom- adv. "so an etwas entlang, dass Berührung damit stattfindet" (P 612 f.)

1. The question mark is motivated by myk. *rewo-* (cf. Beekes 1969: 232 f.)

konkho- 'muscle' (P 614)

lorgā-, lorgi- 'log, stick' (P 691 f.)

moḱs, moḱsũ 'soon' (P 747)

porḱo- 'swine' (P 841)

sol(e)u- 'safe and sound, whole' (P 979 f.)

suomb(h)o- 'spongy, porous' (P 1052)

uobhsā 'wasp' (P 1179)

uortoko- 'quail' (P 1180)

C. Non-radical o^2

On a rather superficial investigation I have got the impression that the only certain cases of non-radical o in existence are the medial so-called secondary endings (see excursus to chapter 3).

Fundamental o (o^2) shows a distributional problem of the same kind as a , but less marked. P has about 30 titles with radical o - and about 70 with $-o$ -. Only a little more than twice as many instances of medial $-o$ - should cause some surprise with regard to the large predominance of $-e$ - over e -. Besides the most certain cases of o^2 are almost equally divided between o - and $-o$ -.

Bearing in mind the comparatively large number of radical o^2 's in initial position, but at the same time the necessity of not leaving out $-o^2$ -, a laryngealist, who assumes an o -colouring laryngeal (O), probably makes the best of his theory on this point by reasoning in the following way: With an O that was probably most frequent in the position Oe - (i.e. initially) and C/ReO - (cf. the corresponding reasoning concerning a , see 3.2.2.1.1) we have an explanation of the comparatively high frequency of o^2 -, and, further, of \bar{o} totally. In order to see o^2 as secondary throughout we only need to reckon with an isolation (and "going wrong") of o^1 to a certain extent. The latter explanation is possible for at least the greater part of the cases of medial o^2 . When the rather small number of (fairly) certain cases of o^2 that there was from the beginning is decimated by an o that is caused inter alia by the distributional aspect, it is an attractive solution to deny the existence of a fundamental o altogether.

Is this correct? Does the so-called fundamental *o* require an *o*-colouring *H*?

To begin with I wish to point out that, as I have said, a laryngealist who works with an *o*-colouring *H* to some extent still has to reckon with an isolated apophonic *o* behind the so-called fundamental *o*. And to other deniers of "fundamental" *o* the only possible explanation is : < apophonic *o*. It is probably impossible to decide what is the case. But the thought is nearer to hand that there was an *o* before the ablaut *e* : *o* and that the ablaut grade *o* was connected with the already existing *o*-vowel than the thought that a seemingly fundamental *o* is secondary to the *o*-grade of the ablaut system *e* : *o*. Of interest in this connection is the question whether the ablaut *o* has phonetically arisen from *e* or whether it has a sound-symbolic origin or the like. If the latter is the case, an *o*-vowel, a primary or fundamental *o*, must have existed before the emergence of the qualitative ablaut *e* : *o*.

Against the background of all that has been said above we can probably answer the question whether PIE *o*² requires an *o*-colouring *H* in the negative. Anyone who is not bound by a prejudice concerning the appearance of the PIE vowel system need only feel surprise at the relatively large number of radical *o*²-s. But the tolerably certain cases of fundamental *o* totally are so few that they do not create any clear distributional problem.

3.2.2.2 *Prothetic vowels in Gr. and Arm.*

Ever since the childhood of the laryngeal theory — with Cuny as the launcher of this proof? (see 1.2.) — the so-called prothesis in Gr. and its counterpart in Arm., have been derived from PIE *H*. And this application of the laryngeal theory has played an important part as a member of a complex of arguments whose other members are: (a) some cases of alternation *e* : *a* which is assumed to exist between state I and state II of a root and which is explained by the root vowel only in the former case being preceded by an *A*, e.g. Gr. αὔξω (*Aeuk-s-*) : ἄεξω (*Ayek-s-*, *A* has given the prothetic vowel *α*), (b) the Skt lengthening of the final vowel in cases like *anūrúdh-*, *sūnára-* (see 1.3.1.1 Kuryłowicz, 3.2.1.3), (c) the "Attic" reduplication in Gr. and the assumed counterpart to it in Skt (see 3.2.1.4), (d) the negative Gr. *vω-*, *vη-*, *vā-* (see 1.3.1.11 Beekes).

Beekes (1969: 18 ff.) thoroughly treats the phenomenon “prothetic vowel” in Gr. and groups as to age, inter alia, the large, relevant Gr. material. He arrives at the opinion that in a genuinely Gr. basic group the prothetic vowel is a constant element with constant vowel colour, if taken word by word. As far as the material will allow a comparison to be made he also finds very good correspondence between prothesis in Gr. and Arm., inter alia ἄλωπη : *aluēs* and ἀνήρ : *ayr*, but λευκός : *loys* (Beekes 1969: 22). Beekes considers (with other scholars) that this situation speaks strongly in favour of the explanation: the prothetic vowel in Gr. and Arm. has arisen through the *H* of *HR*- and *HC*- being vocalized (or it has arisen < *ʷ* in contact with *H*) in these two IE dialects.

Even if Beeke’s view of the Gr. material and the opinion that the correspondence between Gr. and Arm. — which, however, seems to concern quite a small number of words — originates in conditions in PIE, are accepted without reservations, this in no way means that the laryngeal explanation must be accepted too. The assumption that PIE initial *əR*- and *əC*-, with *ə* as a fundamental vowel (cf. 3.1), have only been retained in Gr. and Arm. is no more difficult to assent to. — But I also think there is the possibility of seeing prothesis as an innovation common to Gr. and Arm.

The complex of arguments to which prothesis in Gr. and Arm. has been thought to belong — see points (a)-(d) above — may be (strongly) questioned if the other members are judged separately. Regarding (a) — (c), see 3.2.2.3 and 3.2.1.3—4. Regarding (d): There seems good reason to think Gr. *νω*-, *νη*-, *νᾱ*- have arisen from the zero grade of the negation *ne*, *n̥*, in contact with words with prothetic vowels (see Beekes 1969: 98 ff.). I wish to draw attention to the fact that *n̥* < *n* + *ə*, seen as originally vocalic, is far from an impossibility (cf. 3.2.2.9).

3.2.2.3 “Schwebeablaut” *ReC(C)*- : *aRC(C)*-

There seem to be a few certain cases of alternation *ReC(C)*- : *aRC(C)*- in material containing the same root:

(1) *lek(-s)*- : *alk*- ‘defend, protect’.

Skt *rákṣati*, Arm. *aracel* (with a prothetic vowel), Gr. ἀλέξω (with a prothetic vowel) : Gr. ἀλή ‘defence, strength’, OE *ealgian*.

(2) *meg(-s)* - : *aug(-s)* - 'increase, grow'.

Skt perf. *vavákṣa*, Gr. ἀέξω (with a prothetic vowel), Goth. *wahsjan* : Gr. αὔξω, Lat. *augēre*, Goth. *aukan*, Lith. *augmuō* 'plant'.

(3) *mes-* : *aus-* 'shine'.

Skt *vasantá-*, Gr. ἔαρ 'spring', Lith. *vasara* 'summer' : Lith. *aušrà* 'dawn, sunrise', OLith. *ausas* 'gold', Lat. *aurōra*, Gmc *austro* in OE *eastre* 'east', etc.

(4) *mes-* : *aus-* 'spend the night, dwell'.

Skt *vásati* 'dwell, spend the night', Arm. *goy* 'exists, is at hand' : Gr. ἰάω (*ι-αυσω, reduplicated form); cf. Arm. *aganim* 'spends the night', which indicates that *s* in *aus-* (and *mes-*) is an enlargement. — Gr. ἄεσα (νύκτα) 'spent (the night)' has by some scholars been understood as belonging to the form *mes-*, with a prothetic vowel (see Frisk 1960).

(5) *reġ-* : *arġ-* 'white, shining'.

Skt *rajatá-* 'white, silver coloured, silver': Skt *árjuna-* 'white, silver coloured', Lat. *argentum*, Gr. ἀργής 'white, shining', Toch. A *ārki*, B *ārkvī*, Hitt. *ḫarki-* 'white'.

(6) *mei-* : *avi-* 'bird'.

Skt *véḥ* : *vīḥ*, Avest. *vīš* : Lat. *avis*.

(7) *leg-* : *alg-* 'worry (over something)'.

Gr. ἀλέγω (with a prothetic vowel?) : Gr. ἄλγος 'pain, suffering, worry'.

It is reasonable to assume that the pairs given above are related in some way. And in most cases, at least, it seems that we have to do with a PIE mechanism, a "Schwebeablaut", however this phenomenon is to be understood (cf. 3.2.1.2).

If, according to Hirt, we start out from the PIE bases *alek-* (+*s* as an enlargement), *ameg-* (+*s* as an enlargement), *ames-*, etc., ἀλή, αὔξω, ἰάω etc. are simply special cases of 3.2.2.1 and the alternation *e* : *a* in material belonging to the same root is of no especial interest to the laryngeal theory.

If, on the other hand, *aRC-* has arisen from *ReC-* through metathesis (cf. 1.3.1.9 Schmidt-Brandt) or *aRC-* is an innovation to the zero grade of *ReC-* (see Anttila 1969:175, with the references there to previous parts of the text) the laryngeal theory

seems to be needed to explain the vowel alternation $e : a$ (from $AReC-$ \sim $AeRC-$).

The laryngealists are in a position to assert that $AReC-$ has twice with certainty, (1) and (2), and twice possibly, (4) and (7), been testified to by a prothetic vowel, which may give a complex proof of considerable weight (see 3.2.2.2).

But the alternation $e : a$ need still not be related in such a way that an H (A) is required here.

I do not think that a PIE base $aReC-$ (or $VReC-$ on the whole) is an unreasonable assumption. Seen from a traditional point of view we would have a special type of "disyllabic bases" and the alternation $ReC- : aRC-$ need not necessarily be equivalent to the type $per\bar{k}- : pre\bar{k}-$ for which Anttila shows a preliminary stage $pere\bar{k}-$ to be improbable (see 3.2.1.2).

There is also at least one further possibility of explaining the alternation $e : a$ in a traditional way. Contrary to what Anttila (partly according to Kuryłowicz) thinks (1969: 163 ff.; cf. 3.2.1.2) $ReC-$ may probably have arisen from the zero grade $\bar{R}C-$ of $aRC-$. Roots with $RVC-$ are more common than those with $VRC-$. And the conditions set forth by Anttila for the opposite development, $CReC- \rightarrow CeRC-$ via $C\bar{R}C-$, the emergence of a new full grade form by derivation, is at least partly at hand for the cases discussed of the alternation $ReC- : aRC-$.

Let us make a comparison to a case of alternation $ReC- : eRC-$.

Under the title "*erē-s* (*ers*, *rs-*, *eres*) und *rēs*, *rōs* 'fliessen'" in P (336) the following is found, among other things: Skt *árṣati* 'floats', *rása-* 'juice, liquid', Slavic *rosa*, Lith. *rasà* 'dew', Lat. *rōs* 'dew', ON *rás* 'course, pace'. — "Zugehörigkeit unseres Wz. **eres-* zu **er-*, **or-* 'in Bewegung setzen, lebhafte Bewegung' ist erwägenswert" (P 336).

If, according to Anttila, one of the two full grade forms has here arisen from the other on derivation, via the zero grade, this probably concerns *res-/ros-* (with the lengthened state *rēs-/rōs-*).

It may also be permitted, in this connection, to recall the thought I mentioned in 3.2.2.1 that an initial a at least to a certain extent may be the result of an early PIE or pre-IE prothesis.

3.2.2.4 The loss of \bar{a} before vowels

\bar{a} drops out before vowels, e.g. in the Skt 3rd p. pl. *rudánti* (< *rudā-onti*, to *reudā-* 'howl, weep') and the gen. sing. *patháh*

(< *pnt(h)ə-é/os*) of *pánthāh*. The failing contraction when *ə* is in contact with a vowel is to Hendriksen (see 1.3.1.2) evidence that *ə* has here actually been represented by a consonantal *H*. The thought is noteworthy (cf. 1.3.1.13 Lindeman). But it is hardly necessary to take it for granted that the combination of a weak vowel *ə* (roughly equivalent to the Eng. *ə*?) and a full grade vowel should give the same result as a full grade vowel + a full grade vowel.

Possibly the laryngeal theory should, however, be granted a plus on this point (to be kept in mind for the final appraisal).

3.2.2.5 *Certain aspirates in Indo-Iranian (and other IE dialects)*

Ever since Saussure 1892 (see 1.1) the derivation of a great number of voiceless aspirates (*th*, *ph*, *kh*) in Indo-Iranian, to which were soon added a few cases of voiced aspirates, < stop + *H*, is a quite general application of the laryngeal theory. — See among others 1.2 (Cuny), 1.3.1.1 Kuryłowicz, 1.3.1.8.2, and the historical outline in Hiersche 1964:7 ff.

The cardinal support is the word for 'road' in Indo-Iranian (inflected like a root noun) where Avest. shows regular distribution of aspirates and non-aspirates, nom. *pantā* (< *pent-oH*): gen. *paθō* (< *pntH-os*) (cf. 1.3.1.1 Kuryłowicz).

On the basis of presentations in the literature I have conceived it to be at least possible, perhaps probable, that there is some kind of connection between many cases of voiceless aspirates, perhaps sometimes voiced aspirates too, and *ə*.¹

But I do not think that it is a phonetic impossibility that the stop was aspirated when the "vocal murmur" *ə* dropped out (before vowels). In any case that possibility should be a match to the laryngealistic idea with regard to the fact that the emergence of aspirate < stop + laryngeal, or the like, seems to be a bold assumption from a phonetic point of view (see Hiersche 1964:32 f.).

3.2.2.6 *Certain occurrences of k (and g)*

According to Sapir and Sturtevant *k* has arisen in connection with a certain combination of two different *H*'s (see 1.3.1.5). Cowgill

¹ We must also reckon with another origin of voiceless aspirates in Indo-Iranian (see Hiersche 1964).

(1965:175 f.) and Martinet (1955:56) point out how improbable this idea is, even if in principle the thought that *k* has arisen from contiguous *H*'s is accepted, regarding those morphological categories that (Sapir and) Sturtevant wish to explain by its means: the *καπα*-aorists and the *k*-perf. in Gr. and the noun forming *k*-suffix. On the other hand Martinet as well as Lindeman (see 1.3.1.13) believes that *k* to some more moderate extent may have arisen through contiguous *H*'s, and they would in this way explain *k* in a few particular cases, chiefly Lat. *costa*, OCS *kost* vis-à-vis Gr. *δοτέον* (cf. Hitt. *ḫaštāi*-). But it is fairly obvious that the laryngeal theory is not necessary only to explain such isolated "anomalies"; cf. for instance a bewildering alternation like *daḱru* 'tear' : *aḱru* 'tear' (P 23, 179).

Martinet's notion of *Hs* → *ks* (see 1.3.1.7) is in itself a fascinating idea, but so speculative that it must probably be counted as an encumbrance to the laryngeal theory (cf. Cowgill 1965: 176 ff.)

The same may be said of the attempts to explain what looks as if Gmc *k*(*k*) or *g* < *ɣ* (see 1.3.1.6 Lehmann) from a connection of *ɣ* and *H*. In the first place, at least in one case, the presence of an *H* — with the acceptance of the main criteria of the laryngeal theory for *H* — is extremely uncertain, viz. in OE *geoguð*, OS *juguð*, OHG *jugund* 'youth' (vis-à-vis Goth. *junda* 'youth', Skt *yúvan*- gen. *yúnaḥ*, Lat. *iuvenis*, Lith. *jáunas* 'young'). But the main objection — which is of a kind that could be made by a laryngealist — is that in the rest of the cases it remains to be proved that the development of these (relatively few) words has been this development and not another, known, development (that agrees with the core of the laryngeal theory). Why not (throughout) a development into *brū* and *mū* in the words behind ON *bryggja*, *mygg*, etc.? (Lehmann's construction, 1952: 48, *bhr̥Hu-* → *br̥g-* → *brug-*, but *bhr̥Hu-*, with vocalic *u*, → *brHu-* → *brū-*, etc., really does not inspire confidence.) Why have not ON *nōkkvi*, OHG *nacho* 'boat', etc., the stem *nō-* (like ON *nór* 'boat')? (Lehmann's assumption 1952: 49 that the *k*-form originates in an uncontracted root *neAɣ-*, *nór*, on the other hand in a contracted variant, *nāu-*, is ad hoc indeed). — It is another thing that it is also difficult to explain this phenomenon in any other way. But I make the following decision, in principle: a Gmc innovation.

3.2.2.7 Certain exceptions to "Brugmann's law"

"Brugmann's law": PIE *o* → Indo-Iranian *ā* in open syllables is by Pedersen (1900:87) altered to: PIE *o* → *ā* before *r*, *l*, *m*, *n* in open syllables, which Lehmann (1952:30) rewords: PIE *o* → Indo-Iranian *ā* before the consonantal allophone of *R* in open syllables.

The exceptions that still, however, remain after the revision of the "law" may, according to Lehmann, be removed by means of the laryngeal theory. Thus the contrast 1st p. sing. *cakára* : 3rd p. sing. *cakāra* originates in PIE *kekorHe*: *kekore*. The *H* in the 1st p. sing. *-He* (→ *-a*) has been retained long enough in Indo-Iranian to make the syllable closed at the time of the effect of the sound law. And analogically the failing lengthening of a causative like Skt *janáyati* 'gives birth', to the set-root *ġenā-* (as compared to, for example, *pādáyati* 'make fall' to *pād-* 'foot') is on a laryngealistic view to be understood as originating in *ġonHeje/o-*.

Lehmann has this explanation of the failing lengthening from Kuryłowicz (1927:103) whose idea has been accepted also by many other laryngealists (see among others Hoenigswald 1965:96, Beekes 1969:10). At a later stage, however, Kuryłowicz rejects it. He then (1956:321 ff.) asserts that "Brugmann's law" is morphologically caused, and he reasons in the following way:

In the type PIE *sed-* → Indo-Iranian *sad-* the root vowel has normally not fallen when the accent was — [˘] for which reason the zero grade and the full grade — before the lengthening of *o* — here coalesced, contrary to what happened in other types of root. *a* was therefore added in the *o*-grade **sad-* from the following analysis of the practiser of the language: *taud-* < *tud-* + *a*, *sau-* < *sū* + *a*. From the type *sād-* the "lengthening" (in morphological categories) spread to other aniṭ-roots, and to set-roots, because the *o*-grade of the type *sav-* before vowels had the same structure as *sad-* but contrasted maximally to *taud-*.

Kuryłowicz' ingenious explanation of the much-debated development PIE *o* → Indo-Iranian *ā* is perhaps (in principle) correct. The difficulty of formulating the "sound law" may depend on the fact that this is not a phonetic phenomenon.

However I do not consider myself able to make a decision in this question. Fortunately it does not seem to be necessary for

the question here discussed. Kuryłowicz points out that there is no fundamental difference between *seṭ*-roots and *aniṭ*-roots regarding the occurrence of the lengthening of original *o* in Indo-Iranian derivation, including (chiefly) the causatives, or inflection, and presents (1956:323, 332, 337) material that seems to support this.

Kuryłowicz now wishes to explain the contrast 1st p. sing. *caḱára*: 3rd p. sing. *caḱāra* by the fact that an analogical lengthening among the sing. forms first affected the 3rd p. sing., and that an established contrast between 3rd p. sing. *-ā-* and 1st p. sing. *-a-* prevented the latter from also being lengthened. Since the development *o* → Indo-Iranian *ā* in contact with *R* evidently is far from obligatory, there is no need to commit oneself to Kuryłowicz' explanation, but we can assume an early wavering between *a* and *ā* in both the 1st and 3rd p. sing. with a polarization that was pre-literary.

An argument against "1st p. sing. *caḱára* < *kekorHe*" that is independent of Kuryłowicz' reasoning is this: Why is there the alternation 1st. p. sing. *-a-* : 3rd p. sing. *-ā-* in the perf. of *seṭ*-roots too? (Cf. Kuryłowicz 1956:337).

The exceptions treated from "Brugmann's law" (in revised form) seem to have no value as a proof of the assumption: *H* behind *ə-* and therefore also of the assumption : 1st p. sing. perf. *-a* < *-Ae* (cf. 3.2.2.1).

3.2.2.8 PIE and/or Gmc *ij̥*, *uj̥*

It will be recalled that the Gmc phenomenon *Verschärfung* may be described as the fact that PIE intervocalic *i̯* and *u̯* in certain cases correspond to West Germanic *ij̥*, *uj̥*, East Germanic *ddj̥*, *ggj̥*, North Germanic *ggj̥*, *ggj̥*, whereby the East and North Germanic equivalents are almost generally seen as secondary to *ij̥*, *uj̥*, with the exception of a few laryngealists (see Lehmann 1.3.1.6).

Examples of *ij̥* etc. are found in Goth. *waddjus* 'wall', ON *veggr*, OE *wāg* (according to P 1120 f. to a root *uei-*, *ueiə-* 'turn, bend') and ON *egg*, Crimean Gothic *ada*, OHG *ei*, OE *æg* (according to P 783 f. < PIE *o(u)i̯-om* or < *əi̯om*). The *Verschärfung* of *i̯* has, on the other hand, failed to appear in e.g. Goth. *air*, ON *ár* 'early' (cf. Avest. *ayar* 'day'; see P 12) and in the word for a metal, Goth. *aiz*, ON *eir*, OE *ár*, *ær*, OHG *ēr* (cf. Skt *áyas-*; see P 15 f.).

Examples of $\mu\mu$ etc. are found in ON *dogg*, OE *dēaw*, OHG *tou* 'dew' (cf. Skt *dhāvate*; see P 259 f.) and ON *hoggua*, OE *hēawan*, OHG *houwan* (cf. Lith. *káuju*, *káuti*; see P 535). The Verschärfung of μ , on the other hand, has failed to appear in e.g. the relationship-indicating Goth. *awo*, ON *afi*, (cf. Lat. *avus*; see P 89) and in ON *ær*, OE *ēow*, *ēaw*, OHG *ou* 'sheep', Goth. *auistr* 'sheepfold', cf. Lat. *ovis*; see P 784).

In Lindeman 1964:9 ff. a detailed historical outline is given of the attempts till then to explain the Gmc Verschärfung. Regarding the material discussed it is suitable to refer to the same work (112 ff., 141 ff.); see also 1.3.1.6 Lehmann above.

Some of those who see an effect of H in the Gmc Verschärfung, among others Lehmann (see 1.3.1.6), assume a combination in Gmc of i or μ and a retained reflex of H , while at least Sapir-Sturtevant (see 1.3.1.5) and Lindeman reckon with ii , $\mu\mu$ having appeared already in PIE.

Lindeman has in quite a different way to that of Sturtevant given arguments for his assumption. According to him PIE $ii < Hi$ or iH is found, except in the Gmc Verschärfung, also, *intē alia*, in the following categories:

(a) the adj. suffix Gr. *-aios* (*ἀγελαιος* : *ἀγέλη*, *βίαιος* : *βίη*, *Ἀθηναῖος* : *Ἀθηνή*) corresponding to Skt *-eya* (*māmāteyā-* : *māmātā-*, *sabhēya-* : *sabhā-*), Osco-Umbrian *-ai(i)a-* (*kersnaiias* : *kersnu*); the suffix type has, according to Lindeman, arisen in root nouns with long vowels and spread from them to *ā-* stems (Lindeman 1964: 56 ff.).

(b) optatives to the root type $C\bar{V}$ - : Gr. *δοίην*, *θείην*, *σταίην*, Skt *deyām*, *dheyām*, *stheyām*.

PIE $\mu\mu < H\mu$ or μH is the case, according to Lindeman, except in the Gmc Verschärfung in some Gr., especially Aeolic, cases of diphthongs between vowels and in some Arm. developments.

Gmc Verschärfung-words with corresponding ii and $\mu\mu$ in other IE dialects are, according to Lindeman (1964:113, 135), among others ON *egg*, etc. (: Serbic *jáje* 'egg', Gr. *ᾠωνός*) and OHG *hūwo* (: Gr. *καύᾱξ* name of a sea-bird).

The conditions necessary for Hi , $iH \rightarrow ii$ and μH , $H\mu \rightarrow \mu\mu$ were, according to Lindeman, an expressive gemination in popular language. Side by side with an attested development VHi , $VH\mu \rightarrow$

$\bar{V}i$, $\bar{V}u$ before vowels and the loss of H without quantitative effect in V_iH , V_uH in the same position, it has thus been possible for combinations of short vowel+long i and u to appear under the influence of the expressive lengthening.

I consider it plausible to see a basic reason of the type assumed by Lindeman behind the much debated Gmc (and PIE) $i\bar{i}$, $u\bar{u}$. But it is still no drawback (or, at least, no great drawback) to start out from the traditional entities \bar{V} or \bar{a} in connection with the semivowel (if $i\bar{i}$ and $u\bar{u}$ have really arisen in this position). For why not just as well $\bar{V}i \rightarrow V_i\bar{i}$ and $\bar{V}u \rightarrow V_u\bar{u}$, etc. as the result of an expressive emphasis of the semivowel as an assimilation of H_i , etc.?

One may also venture to assert that the Gmc (and PIE) *Verschärfung*, irrespective of how the contrast $i : i\bar{i}$, $u : u\bar{u}$ in words with \bar{V} or \bar{a} is to be explained, has no proof value for the laryngeal theory. For if, let us say, the lengthened semivowel has arisen in contact with \bar{V} and \bar{a} in a certain accent position — on earlier, as it seems contradictory, explanations of the Gmc *Verschärfung* of this type, see Lindeman 1964:9 ff. — there is no more need of starting from a laryngealistic interpretation of these entities than there is for Lindeman's explanation.

3.2.2.9 The zero grade of the set-roots

The appearance of the zero grade of the set-roots has ever since Cuny 1912 (see 1.2) been one of the main arguments in favour of the assumption "an R or C behind \bar{a} " and thereby also of the necessity of the laryngeal theory.

A necessary basis for the discussion are the following three tables.

(I) The zero grade of $Vr\bar{a}$ or $R\bar{V}$, or the development of $R\bar{a}$ between consonants or after a final consonant:

(a) When $R=i$, u the result was \bar{i} or \bar{u} in all IE dialects, possibly with the exception of Gr. (see for example Beekes 1969: 155 ff.).

(b) When $R=r$, l , m , n the result was the following (current symbols covering the PIE counterparts of the historical developments of the zero grade of $Vr\bar{a}$, $r\bar{V}$, $Vl\bar{a}$, $l\bar{V}$, etc. are \bar{r} , \bar{l} , \bar{m} , \bar{n}):

PIE	Skt	Iranian	Gr.	Lat.	Celtic	Serbic	Baltic	Gmc
\bar{r}	<i>ir, ūr</i>	<i>ar</i>	ῥᾱ, ῥω, ῥη (2)	<i>rā, ara</i>	<i>rā, ara</i> <i>ar</i> (3)	<i>r</i>	<i>ir</i>	<i>ur</i>
\bar{l}	<i>ir, ūr</i>	<i>ar</i>	λα, λω, λη αλα	<i>lā, ala</i>	<i>lā, ala</i> <i>al?</i>	<i>u</i>	<i>il, ūl</i>	<i>ul</i>
\bar{m}	<i>ā, ām</i> <i>imi</i> (1)	<i>am?</i>	μα, μω, μη αμα	<i>mā, ama</i>	<i>mā, ama</i> <i>am?</i>	<i>e</i>	<i>im, ūm</i>	<i>um</i>
\bar{n}	<i>ā, ām</i>	<i>ā</i>	να, νω, νη ανα	<i>nā, ana</i>	<i>nā, ana</i> <i>an?</i>	<i>e</i>	<i>in, ūn</i>	<i>un</i>

Comments

(1) See 1.3.1.10 Kuiper.

(2) The appearance of the zero grade in Gr. of $VR\bar{\alpha}$ and $R\bar{V}$ has been much discussed and the relevant material has been differently interpreted (see Beekes 1969:186 ff.). Especially after having read Beekes 1969:186 ff. I have seen reason to present these forms without any “?”.

(3) Regarding the development in Celtic of \bar{r} , \bar{l} , etc. see above all Watkins 1958:85 ff., Hamp 1965²:227, note 5.

(II) R before vowels — arisen through the effect of Siever's law and, above all, from the zero grade of $VR\bar{\alpha}$ or $R\bar{V}$:

(a) When $R=i, u$ the result was throughout $i\bar{i}$, $u\bar{u}$.

(b) When $R=r, l, m, n$ the result was the following:

PIE	Skt	Iranian	Gr.	Lat.	Celtic	Arm.	Balto-Slavic	Gmc
\bar{r}	<i>ir, ur</i>	<i>ar</i>	αῖ, οῖ?, εῖ?	<i>ar</i>	<i>ar</i>	<i>ar</i>	<i>ir, ur</i>	<i>ur</i>
\bar{l}	<i>ir, ur</i>	<i>ar</i>	αλ, ολ?, ελ?	<i>al</i>	<i>al</i>	<i>al</i>	<i>il, ul</i>	<i>ul</i>
\bar{m}	<i>am</i>	<i>am</i>	αμ, ομ?, εμ?	<i>am, em?</i>	<i>am</i>	<i>am</i>	<i>im, um</i>	<i>um</i>
\bar{n}	<i>an</i>	<i>an</i>	αν, ον?, εν?	<i>an, en?</i>	<i>an</i>	<i>an</i>	<i>in, un</i>	<i>un</i>

Comments:

(1) Regarding the cases in question of Gr. οῖ, εῖ etc., see Beekes 1969:216 f., 221 ff.

(2) On the Slavic reflexes of this mutual Balto-Slavic (Proto-Balto-Slavic) basis see Arumaa 1964:151 ff.

(III) R before consonants:

(a) The vocalic counterpart of \bar{i} , \bar{u} before consonants is throughout i , u .

(b) \bar{r} , \bar{l} , \bar{m} , \bar{n} have the following historical reflexes:

PIE	Skt	Iranian	Gr.	Lat.	Celtic	Arm.	Balto-Slavic	Gmc
\bar{r}	\bar{r}	$\bar{a}r$	$a\bar{r}$, $o\bar{a}$	or	ri , ru	ar	ir , ur	ur , ru
\bar{l}	\bar{l}	$\bar{a}r$	$a\bar{l}$, $\lambda\bar{a}$	ol	li , lu	al	il , ul	ul , lu
\bar{n}	a	a	α	em	em , am	am	im , um	um
\bar{m}	a	a	α	en , an	en , an	an	in , un	un

Regarding the zero grade of the set-roots or — more generally — the historical result of PIE $R\bar{a}$ before consonants, the laryngeal theory (ever since Cuny) has an objection against the traditional view that seems plausible. Why do we not (in Indo-Iranian) find Ri , (in other IE dialects) Ra (and in Gr. besides also $R\epsilon$, Ro) — e.g. $*pli$, $*pla$ (and gr. $*\pi\lambda\epsilon$) of $pel\bar{a}$: $pl\bar{e}$ ‘fill, be full’ — like Ci , Ca etc. < $C\bar{a}$?

Before I proceed to examine how telling this argument is for the assumption of RH behind $R\bar{a}$ it should first be remarked that the positive argumentation of the laryngealists is here poor.

This is the case both concerning those who, with Cuny (see 1.2), assume PIE \bar{R} as a phonetic (or phonemic) reality, not only concerning the zero grade of $V\bar{u}\bar{a}$ or $\bar{u}\bar{V}$ and $V\bar{i}\bar{a}$ or $\bar{i}\bar{V}$ but also concerning \bar{r} , \bar{l} , \bar{m} , \bar{n} , and those who behind \bar{r} , \bar{l} , \bar{m} , \bar{n} like Lehmann (1952: 87 ff.) see $\bar{R}H$ throughout or the zero grade $\bar{R}H$ and the reduced grade $\bar{v}RH$ (as does Beekes in 1969: 203 ff.) with a varying development in the dialects. Neither of these positions is, perhaps, impossible — regarding the latter under the condition that H is confirmed by other reasons and (?) $\bar{v}R$ in $\bar{v}RH$ is seen as an allophone of \bar{R} — but by no means do they appear as the solution of the problem.

In PIE long \bar{r} , \bar{l} , \bar{m} , \bar{n} , which have been constructed because correspondence with i , u was assumed, as well as in $\bar{r}H$, $\bar{l}H$, $\bar{m}H$, $\bar{n}H$ a development that corresponds better to that of \bar{R} before consonants (see table III) than what is the case are expected in the first place. The immediate starting point PIE long \bar{R} is therefore more favourable than $\bar{R}H$. For we can refer to the possibility that long PIE \bar{r} , \bar{l} , etc. were phonemes whose historical result only partly may be predicted from the development of corresponding short phonemes. But $\bar{R}H \rightarrow \bar{R}$ is (irrespective of the question of H) an unconfirmed assumption. And anyone who derives the forms in table (I) directly from $\bar{r}H$, $\bar{l}H$, etc. must, entirely or partly, reckon with a special development of the pre-consonantal \bar{R} before

H in Indo-Iranian, Gr., Lat. and Celtic. This is the case also after, concerning the development of *r̥H*, etc., regard has been paid not only to the possible (lengthening) effect of the loss of *H*, but also to the possibility that *H* (through "laryngeal umlaut") has coloured a vocalic glide developed on contact with *R̥* (see 1.3.1.10 Kuiper, 1.3.1.11 Beekes).

If we start out instead from *R̥ə* with a vocalic *ə* — the probability of the construction will be discussed below — there are fewer question-marks.

Gmc and Balto-Slavic are neutral with their identical reflexes of pre-consonantal and pre-vocalic *r̥*, *l̥*, *m̥*, *n̥*. In Celtic, Gr., and Lat. is found a reflex, *aRa* that looks like *< R̥ə* with a "regular" development of *R̥* before vowels + retained *ə*, and another, *Rā*, that in Gr. may be interpreted as the lengthened (normal?) pre-consonantal reflex of *R̥*, but which, when regard is paid to Lat. and Celtic *Rā*, clearly shows itself as an exclusive development of *R̥ə* (to be understood as *R̥ə* → *Rā*?).

In Iranian *R̥* has, in the assumed *R̥ə*, the prevocalic variant, and the loss of *ə* is expected (without any effect of the loss, as in Gmc).

In Skt it seems that the type *imi* might be a counterpart to Gr., Lat., Celtic *aRa* and reflect *R̥ə* with retained *ə*, however, with a special development of pre-vocalic *m̥* (colouring of the vowel *ə*?). *īr*, *ūr*, again, have the appearance of pre-vocalic lengthened *R̥* but with an (unexpected) loss of the vowel *ə* (cf. Balto-Slavic).

Indo-Iranian *ā* is the only case where the reflex of *rə*, *lə*, *mə*, *nə* before consonants seems to require the interpretation: lengthened pre-consonantal reflex of *R̥*.

I assert that the historical picture of the PIE symbols *r̥*, *l̥*, *m̥*, *n̥* speaks more in favour of the starting point *R̥ə* with vocalic *ə* than of *R̥H*. This may be asserted even if we accept the thought that *ə* has caused what some laryngealists call "laryngeal umlaut" (see 1.3.1.10 Kuiper, 1.3.1.11 Beekes). An *ə* that is basically vocalic may just as well have caused "laryngeal umlaut" as an *H*.

The fact that the position and colour of the vowels appearing with *R*, with the exception of Indo-Iranian *ā*, may throughout be explained from *R̥* or *ə* in the connection *R̥ə*, or from both *R̥* and *ə* in this connection, has not been sufficiently taken into consideration.

If a certain competition as to which of them has maximum intensity is assumed between \bar{R} and $\bar{\alpha}$ both the development into $R\bar{\alpha}$ ($R\bar{e}$, $R\bar{o}$), that is $\bar{R}\bar{\alpha} \rightarrow R\bar{\alpha}$, and that into Skt \bar{r} , \bar{u} , that is $\bar{R}\bar{\alpha} \rightarrow \bar{R}$ as a phoneme, may be understood. Finally, Indo-Iranian $\bar{\alpha}$ will have to be seen as a weaker counterindication of the $\bar{R}\bar{\alpha}$ that I have here taken as a starting-point than the many irregular developments that would have to be attributed to a pre-consonantal \bar{R} in an $\bar{R}H$. It may possibly be the case that an \bar{m} , \bar{n} with a vocalic on-glide, arisen in Indo-Iranian on the dropping out of $\bar{\alpha}$ in $\bar{m}\bar{\alpha}$, $\bar{n}\bar{\alpha}$ before consonants has had a development parallel to the pre-consonantal \bar{m} , \bar{n} .

The historical picture of \bar{r} , \bar{l} , \bar{m} , \bar{n} makes it desirable also to derive the zero grades \bar{i} , \bar{u} (concerning Gr. $\iota\alpha$, $\upsilon\alpha$ cf. 3.2.1.7.1) from \bar{R} followed by the vocal $\bar{\alpha}$, that is $i\bar{\alpha}$, $u\bar{\alpha}$. The total or almost total 'victory' of i , and u in the competition can be ascribed to the vowel-like basic character of these R 's.

But how shall the consistent \bar{R} before $\bar{\alpha}$ be explained?

Only to a certain (inconsiderable) extent could \bar{R} be explained through the so-called Siever's law.¹

The situation is the same concerning the zero grade \bar{R} of $VR\bar{\alpha}$ and $R\bar{V}$ before vowels.

I think that, let us say, $CeR\bar{\alpha}-t\acute{o}-$ or $CR\bar{V}-t\acute{o}- \rightarrow CR\bar{\alpha}-t\acute{o}-$, not $CR\bar{\alpha}-t\acute{o}$, and $CeR\bar{\alpha}\acute{o}- \rightarrow CR\bar{\alpha}\acute{o}-$, not $CR\acute{o}-$, depends on the tendency of the language to compensate reduction of the number of syllables, or the "morenzahl" of the root-syllable, which could here make use of the obvious possibility of sonorizing R (by increasing its intensity and (?) "dwelling" on it).

According to Jespersen 1897—1899:536 f. a contrast is found in Danish between the disyllabic *sultne* [suldnə], *fæstne* [fæsdnə], *falne* [falnə], and *sultende* [suldn̩ə], *hæstene* [hæsdn̩ə], *faldende* [faldn̩ə], the latter being trisyllabic through the fact that n as a compensation for the dropping out of the vowel has become (long and) syllabic, cf. also in Jespersen 1877—1899: 536 English *lately* [le¹tli] but *fatally* [fa¹tll̩i], *fitly* [fitli] but *Italy* [itl̩].

There seems to be a development here that is very similar to the one I assume behind PIE $\bar{R}\bar{\alpha}$ and \bar{R} in the zero grade of $eR\bar{\alpha}$, $R\bar{V}$ before consonants and vowels respectively.

¹ On the import and limited range of the "law" see Lindeman 1965: 38 ff., especially 105 (summary).

The development of the zero grade of the set-roots, or of PIE *Rə* generally, offers no proof of the laryngeal theory.

3.2.2.10 Certain occurrences of Arm. *h*

Winter is of the opinion (1965¹:102 f.; cf. Austin 1942:22 ff., Polomé 1950:539 ff.) that the following Arm. words have initial *h* < PIE *H* : *haw* 'hen, bird' (: Lat. *avis*), *haw* 'grandfather' (: Lat. *avus*), *han* 'grandmother' (: Lat. *anus*, cf. Hitt. *ḫanna-*), *hoviw* 'herd of sheep' (: Lat. *ovis*, Hieroglyphic Luw. *ḫaṣa-*), *hogi* 'wind, spirit' (*hov* 'wind', *hovem* 'let air in') (: Lat. *uentus*, Hitt. *ḫuṣant-* 'wind'), *hot* 'smell' (: Lat. *odor*), *hum* 'brutal, cruel' (: Gr. ὀμός, Skt *āmā-*, Lat. *amārus* 'bitter'). Of these the derivation of *hogi*, *hov*, *hovem* seems uncertain (cf. P 847, Mann 1963:41). On the other hand it seems to me that the Arm. *hači* 'the ashtree' (: Gr. ὀξύη 'beechtree, handle', Albanian *ah* 'beech', see P 782) should be added.¹

According to the material found in Mann 1963 Arm. *a-*, *o-* more often than *ha-*, *ho-* corresponds to what is traditionally seen as PIE *a-* and *o-*; examples of *a-* : *acom* 'brings, plays (an instrument)' (: Lat. *agere*, Gr. ἄγω), *aḷ* 'other' (Lat. *alius*), *arawr* 'plough' (: Gr. ἄροτρον, Lat. *arātrum*), *art* 'field' (Gr. ἄροτος 'that can be ploughed', Lat. *arātus* 'ploughed'), *ašun/ašnan*, *ašnande* 'autumn' (Goth. *asans*, OHG *arun*), *arj* 'bear' which is Winter's only example of PIE *a-* : Arm. *a-* (: Gr. ἄρκτος); examples with *o-* : except those given by Winter, *ost* 'branch' (Gr. ὄσος, Goth. *asts*, Hitt. *ḫašduir*), *oskr* 'bone' (Gr. ὀστέον, Hitt. *ḫāstāi-*) and *ut* 'eight' (: Lat. *octo*, Gr. ὀκτώ), we may mention *orb* 'orphan' (: Lat. *orbus*), *ori* (orvo, *oreav*) 'eagle' (: Goth. *ara*, ON *ari*, *ørn*, Hitt. *ḫara-*), *akn* 'eye' and *ak* (*akən*, *akamle*) 'eye, jewel' (with Arm. *o* → *ā* : PIE *okʷ* 'see, eye' (P 775 ff.)). *h* does not seem to be attested before reflexes of PIE *e* and *o*¹.

We may note — though this fact should not, according to the principle I am following, influence the conclusions drawn here — that the correspondence between Hitt. *ḫ-* and Arm. *h-* is poor.

With regard to the fact that Arm. *a-*, *o-* = PIE *a-*, *o-* is well

¹ *haci* has also been given as a possible example of *h* < *H*- in Mann 1963:179. The doubt here shown by Mann is not to my mind motivated by what he gives as a reason. With regard to meaning the alternative explanations — where *h* < *p* — given by Mann (1963:41, 179) *haw* 'grandfather', *han* (Mann has the form *hani*), *hot*, are inferior to those of Winter.

confirmed, a non-laryngealistic explanation of the occurrences of initial *h* of interest here should, from a laryngealist point of view, be preferable. The difficulty of explaining why PIE *a-* and *o- < Ae-, Oe-* is so incompletely attested by Arm. *h-* would then be avoided.

Perhaps the *h* in *haw, han, hot*, etc. depends on the effect of a substratum from the same sphere as may also have given to Anatolian its *ḫ*: the Caucasian languages (see 2.3)?

The remaining reflexes of *H* seen by Winter in Arm. (above all a number of cases of correspondence with the development of PIE *k, kʷ*) I reject without further discussion, with the objection, on principle, that the material is too meagre and too uncertain to allow these assumed traces of *H* in an IE dialect "possessing a phonology that is bizarre to the point of intractability" (Mann 1963: i) to be credited with any value with regard to proving whether the laryngeal theory is tenable, taken as a whole. This is the case concerning inter alia *mukn* 'mouse' (: Lat. *mūs*, Gr. *μῦς*), *jukn* 'fish' (: Gr. *ἰχθυῖς*, OPru. *suckans*), whose chances a priori of giving evidence of a pre-form, *uH* (see Winter 1965¹: 104) to the *ū* met with in other IE dialects are small.

3.2.2.11 *Certain occurrences of Albanian h, γ, ġ*

H. Ölberg (1972) has critically examined Hamp's idea (see 1.3.1.8.5) that certain cases of Albanian *h, γ* and *ġ* originate in PIE *H*. Without attempting to acquire a supported view of my own I have the impression from Ölberg's presentation that so much suspicion can be thrown upon the special Albanian support of the laryngeal theory launched by Hamp that it should be dismissed from the discussion.

3.2.2.12 *Assumed traces of initial HR- in Gr.*

It has been asserted that *H-* is behind the different development of PIE *ī* (according to the traditional view) in Gr., e.g. *ῥς* (: Skt *yáh*) but *ζυγόν* (: Lat. *iugum*), and *ῡ* in the same language, e.g. *ἑσπερος* (: Lat. *vesper*) but *οἶδα* (: Lat. *vidēre*), and also behind *ῥ* in *ῥύξω* 'growls' (: Lat. *rūdere* 'cry', Lith. *rāudmi* 'wail') and cases of *λ, μ, ν* that are long by position in Homer (see 1.3.1.5 Sapir—Sturtevant, 1.3.1.6 Lehmann).

The isolated *ῥ* in *ῥύξω* can hardly be credited with any importance — to be connected with the sound-indicating meaning

of the word? — and concerning the cases of length by position in λ , μ , ν Schwyzler (1953:311) has given reasons for assuming a Gr. innovation (cf. Cowgill 1965:161 f.).

Regarding the mysterious double development of PIE i - and u - even a convinced laryngealist has reason to put a question mark against the assumption that an H is involved. Even if the support for initial H (before R and C), that I have above rejected irrespective of whether H is for the rest proved or not, is accepted, the (different) H 's in assumed H_i -, H_u - seem to be unconfirmed (See Cowgill 1965:160 ff.; cf. Beekes 1969:95 ff.).

In this situation the most defensible thing is to give to the Gr. contrast in cases like $\delta\varsigma$: $\zeta\upsilon\gamma\acute{o}\nu$, $\xi\sigma\pi\epsilon\rho\omicron\varsigma$: $\omicron\dot{\iota}\delta\alpha$ the general explanation: a Gr. innovation. — I would like to guess that at bottom we have to do with a regional difference that is now not possible (?) to trace.

3.3 Summing up appraisal of 3.1.—2

On a more general matching of the traditional view of \bar{V} and ∂ against the laryngealistic one the H of the laryngeal theory seems to be unnecessary (see 3.1).

Concerning assumed (or conceivable) supports or proofs of a more specific kind that have been treated, or at least touched upon in principle, in 3.2, I have arrived at the following view:

The assumed supports or proofs of the laryngeal theory are many. But only those discussed in 3.2.1—2 merit a serious examination. The others (known to me) may be dismissed in a lump with the argument that they are, for obvious reasons, actually an encumbrance to the theory.

For the facts treated in 3.2.1.2—5 and 3.2.2.2, 3.2.2.5—12 the laryngeal theory has no (obvious) advantages.

As regards point 3.2.1.6 (certain cases of hiatus in Skt) and 3.2.1.7 (the possibility of seeing ∂ as a fundamental element of word formation in certain suffixes or endings of the appearance \bar{V} or \bar{i} , \bar{u}) a laryngealistic interpretation is somewhat straighter and more elegant, but not necessary. Concerning point 3.2.2.4 (∂ 's loss before vowels) the laryngeal theory may possibly have a certain advantage (" ∂ is here actually the consonant H that dropped out before vowels").

On two points the laryngealistic version should be credited with a clear advantage (of course under the condition that the laryngeal theory from other points of view or seen from a total standpoint is acceptable).

This is the case concerning, on the one side, the formant of the present stem $n\bar{a}$ (see 3.2.1.1) which in the first place seems to originate in $ne\bar{a}$ (laryngealistic neA), on the other side (see 3.2.2.1) the skewed distribution of a (and o^2). These problems are both elegantly solved with the help of A (and O).

Finally, it is possible to combine 3.2.2.3 ("Schwebeablaut" of the type $ReC- : aRC-$) with 3.2.2.1 to a complex support or proof of the laryngeal theory. Regarding the latter phenomenon, however, the laryngealistic explanation is given good competition by a non-laryngealistic.

It goes without saying that it is possible in some way to escape the explanation of the laryngeal theory also regarding the present-creating $n\bar{a}$ and the skewed distribution of a (and o^2). For the latter problem I have resorted to a couple of alternative, rather bold, attempts at explanations. And concerning the $n\bar{a}$ -formant I have tried to show that it need not necessarily have arisen from $ne\bar{a}$.

The appraisal of the assumed proofs of the laryngeal theory and its application, other than Anatolian h , which I have attempted in this chapter, with the summary as above, may also show my attitude towards the criticism of the laryngeal theory within the same sector as that mentioned in 1.3.3. There may be reason to add here, however: The laryngeal theory as such (the core of the laryngeal theory) is not overthrown because it is over-exploited or abused.

4. Decision concerning the laryngeal theory

In chapters 2. and 3. I have, without the discussion being influenced by the results of 3. under 2. or vice versa, discussed two main types of assumed proofs or supports of the laryngeal theory: the direct exclusive reflex Anatolian *h* (2.) and the indirect, or, in any case, non-exclusive reflexes of *H* (3.).

In the summary of 2. (2.4) I reach the conclusion that it is, of course, the most satisfactory thing a priori to see IE sound or sounds behind Anatolian *h* to which it is possible to attribute sound values useful to the laryngeal theory, but that foreign influence is no impossible assumption. There is much that indicates that even Proto-Anatolian was greatly influenced by another language/other languages (substratum?). It has therefore been thought that there is reason to consider the Caucasian languages, where sounds are found that fall within *h*'s sphere of possibility. And certain cases of *h* in Arm., and also certain losses of PIE phenomena in this language that are shared by Anatolian, may depend on the effect of the same linguistic sphere.

In the summary of 3. (3.3) it is remarked that the laryngeal theory means a decided advantage with regard to the explanation of the present-creating *nā* and the skewed distribution of *a* (and to some extent of *o*²). It may also be said to offer a somewhat "straighter" and more elegant explanation of certain cases of hiatus in Vedic, of certain suffixal *Ṽ*'s, *ī*'s, *ū*'s and of the loss of *ə* before vowels. Concerning all other assumed evidence, other than Anatolian *h*, for the laryngeal theory, the structural simplification of the vowel system that *H* may bring about as well as the many other morphological or phonetical "riddles" that *H* has been thought to solve, the laryngeal theory seems, at least, not (clearly) superior to a non-laryngealistic explanation or to the decision to leave the question mark concerned where it is.

According to my judgment, a final appraisal must mean the weighing of the advantage from a purely Anatolian point of view that there actually is in interpreting h as a PIE sound (in spite of the possibility of foreign influence) and the definite advantages offered by two of the indirect "proofs" of the theory against this clear dilemma to the theory: Why direct (exclusive) reflexes of H only in Anatolian, where the conditions for "through foreign influence" are unusually favourable?

The question may perhaps be further limited. Of the two facts that were under 3. considered to be clearly advantageous to the laryngeal theory, $-nā$ and the distribution of a , the former is probably easier to deal with than the latter. (Apart from what has been suggested under 3.2.1.1 as an alternative to the laryngealistic solution, I wish to mention the possibility of compromising with the laryngeal theory on this point, i.e. by deriving $-nā < -neə$ with $ə$ seen as basically a vowel, but at the same time keeping the traditional view that $ə$ may be a reduction product of \bar{V} .) It may be noted, at the same time, that h and the construction H fit best together within the sector " H behind a " of the laryngeal theory.

On the basis of my appraisal of the "proofs", and of what has been said above under 4. with the support of that appraisal, the question about the justification of the laryngeal theory may be expressed more precisely thus: Can the combination of the remarkable distribution of PIE a and the preference of h for a position in contact with PIE a , supported by the present-formant $-nā$ where a laryngealistic explanation is distinctly superior to a traditional one (and a few other cases where the laryngeal theory has certain advantages), prove the laryngeal theory?

To begin with I wish to state that the full laryngeal theory (of whose core see 1.3.1.14.1) is clearly untenable. "All \bar{V} 's $< eH$ " is not confirmed by Anatolian h (see 2.3.1.2) and is not rendered necessary by the appearance of the PIE vowel system (see 3.1) or of any other more specific laryngeal "proof" (see 3.2.1 (—2)). Thus in any case in the version "the full laryngeal theory" the Proto-linguistic construction is not necessary and therefore unjustified.

More doubtful is the answer to the question whether the laryngeal theory in a reduced variant should be accepted or not. There is some reason for accepting a version with a strongly reduced

theory like that of the later Kuryłowicz (see 1.3.2.1). The points that speak in favour of the laryngeal theory concern the vowel *a*. Thus *h* in Anatolian linguistic material of PIE origin is found above all in contact with vowels that correspond to PIE *a* or *ā* and the present-formant *nā* and the skewed distribution of *a* are difficult to explain according to the traditional view. In addition to *A* attempts have been made to launch an *O*. If so, a certain skewed distribution of *o*, too, (see 3.2.2.1.2) and a few cases of correspondence Hitt. *ha-* : PIE *o*² (which is, however, strongly diminished by the fact that correspondence *ha* : PIE *o*¹ is also confirmed; see 2.3.1.1) would be support for this.

No definite decision can be made, in any case not as I have understood the research situation.

However, it is essential that we are not content with stating this, but put the question more practically: Is the laryngeal theory in the reduced form in question sufficiently probable to be used as if it were proved? Is it, for instance, right to authorize the writings *steA-*, *Aeg-* of the roots with the sense 'stand' and 'drive' (traditionally *st(h)a-*, *ag-*)?

I prefer to answer: no, and to see the laryngeal theory, in a reduced variant, for the time being at least, as a possibility but no more.

It is my wish that other scholars will devote themselves to the task I have here attempted: a test of the phenomena that constitute the core of the laryngeal theory and its "proof", with the aim of being as severe towards the theory as towards the traditional view and giving to the traditional entities \bar{V} and \varnothing the chance that they deserve. For too long there has been a kind of marking time. The laryngealists have expanded or revised the laryngeal theory practically all with a too strong belief in the basic thought of Saussure, while the traditionalists have gone on with their constructions and the reasoning of Brugmann, etc., whereby they, one and all, either entirely disregard the laryngeal theory or give insufficient reasons for their rejecting it. The investigation of the vital points of this subject has suffered from this.

5. Excursus to chapter 2: Anatolian *h* in verb endings and the Anatolian verb system

The etymology of Anatolian verb endings with *h* cannot be discussed by itself. It is necessary to try to form an opinion of the discussion that has been carried on about relevant parts of the Anatolian (especially the Hitt.) verb inflection. Because of this a treatment of the Anatolian *h*-endings among the other — quite short—word studies in 2.2 could not be contained within the limits of that part of the investigation. An excursus on the subject (and only a repetition in 2.2 of the conclusion that it leads to) has therefore seemed most suitable.

5.1 List of the Anatolian verb endings

The Anatolian verb almost lacks functional stem differences. Exclusively by means of different sequences of endings the active voice differs from the medio-passive, the imperative mood from the indicative (or rather from the non-imperative, as the subjunctive, injunctive and vocative moods are missing) and the present tense from the preterite (other differences in tense are not expressed by means of inflection).

By presenting these sequences of endings it is therefore possible at the same time to demonstrate the verb system¹ and the place of the *h*-endings in that system.

My chief sources are Friedrich 1960 (76 ff.), Kammenhuber 1963 (223 ff.), Neu 1968² (16 ff.; on medio-pass. endings), Neumann 1963 (388 f.; concerning Lycian).

Active Voice
Present

	Hittite	Luwian	Palaic	Lycian
sing. 1st p.	- <i>mi</i> - <i>hi</i> (- <i>he</i>)	- <i>ui</i> (- <i>mi</i>)	—	- <i>u?</i>
2nd p.	- <i>ši</i>	<i>ši</i>	- <i>ši</i>	—
3rd p.	- <i>zi</i> (*- <i>ti</i>)	- <i>ti</i> , - <i>i</i>	- <i>ti</i> , - <i>i?</i>	- <i>ti/-di</i>
pl. 1st p.	- <i>ueni</i> (- <i>meni</i>)	—	- <i>uani</i>	—
2nd p.	- <i>teni</i>	—	—	—
3rd p.	- <i>anzi</i> (*- <i>anti</i>)	- <i>nti</i>	- <i>nti</i>	- <i>nti?</i>

Preterite

	Hittite	Luwian	Palaic	Lycian
sing. 1st p.	- <i>un</i> - <i>hun</i>	- <i>ha</i>	- <i>ha</i>	<i>Xa/-ga</i>
2nd p.	- <i>š</i> - <i>š</i> , - <i>ta</i> , - <i>šta</i>	- <i>š?</i> , - <i>ta?</i>	—	—
3rd p.	- <i>t</i> - <i>š</i> , - <i>ta</i> , - <i>šta</i>	- <i>ta</i>	- <i>t</i>	- <i>te/-de</i>
pl. 1st p.	- <i>uen</i> (- <i>men</i>)	—	—	—
2nd p.	- <i>ten</i>	—	—	—
3rd p.	- <i>ir</i> (- <i>er</i>)	- <i>anta</i>	- <i>inta</i>	- <i>nte</i>

Comments

(1) — indicates that there is (according to the hand-books) no attestation (in an Anatolian language other than Hitt.).

(2) In the active voice in Hitt. the sing. endings constitute the “*mi*-conjugation” and “*hi*-conjugation”, respectively.

Imperative

	Hittite	Luwian	Palaic	Lycian
sing. 1st p.	-(<i>a</i>) <i>llu</i>	- <i>allu</i>	—	—
2nd p.	Ø, - <i>i</i> , - <i>t</i>	Ø	Ø	—
3rd p.	- <i>du</i> , - <i>u(l)</i>	- <i>du/-tu</i>	- <i>du</i>	- <i>tu</i>
pl. 1st p.	- <i>ueni</i>	—	—	—
2nd p.	- <i>ten</i>	- <i>tan</i>	- <i>tan</i>	—
3rd p.	- <i>andu</i>	- <i>ndu</i>	- <i>ndu</i>	- <i>ntu</i>

Medio-passive Voice
Present

	Hittite	Luwian	Palaic	Lycian
sing. 1st p.	- <i>ha</i> , - <i>hari</i>	—	—	—
2nd p.	- <i>ta</i> , - <i>tari</i> , - <i>tati</i>	—	—	—
3rd p.	- <i>a</i> , - <i>ari</i> , - <i>ta</i> , - <i>tari</i> (2)	- <i>tari</i> , - <i>ari</i> , - <i>ar?</i>	- <i>tar</i>	—
pl. 1st p.	- <i>yašta</i> , - <i>yaštari</i> , - <i>yaštati</i>	—	—	—
2nd p.	- <i>duma</i> , - <i>dumari</i> , - <i>dumat</i>	- <i>duyari</i> , - <i>duyar</i>	—	—
3rd p.	- <i>anta</i> , - <i>antari</i>	- <i>a/intari</i>	—	—

¹ With the exception of certain periphrastic modes of expression, which are Hitt. innovations, etc.

Comments (see reference figures above)

(1) *-du* in the *mi*-conjugation, *-u* in the *hi*-conjugation.

(2) The distribution of *-ta(ri)* etc., and *-a(ri)* etc., may, according to Neu 1968²:22 be briefly described thus: *mi*-conjugation *-ta(ri)*, *-a(ri)*, *hi*-conjugation = *a(ri)*, *-ta(ri)*. He gives plausible reasons for assuming that *-a(ri)* is the oldest and for explaining *-ta(ri)* as the result of influence from the active *mi*-conjugation.

Preterite

	Hittite	Luwian	Palaic	Lycian
sing. 1st p.	<i>-ḥat(i)</i>	—	—	—
2nd p.	<i>-ta, -tat(i)</i>	—	—	—
3rd p.	<i>-at(i), -tat(i), -ta</i>	—	—	—
pl. 1st p.	<i>-uṣtat(i)</i>	—	—	—
2nd p.	<i>-dumat</i>	—	—	—
3rd p.	<i>-antat(i)</i>	—	—	—

Imperative

	Hittite	Luwian	Palaic	Lycian
sing. 1st p.	<i>-ḥaru</i>	—	—	—
2nd p.	<i>-ḥut(i), -ḥu</i>	—	—	—
3rd p.	<i>-aru, -taru</i>	<i>-aru, -taru</i>	—	—
pl. 1st p.	—	—	—	—
2nd p.	<i>-dumat(i)</i>	—	—	—
3rd p.	<i>-antaru</i>	<i>-antaru</i>	—	—

5.2 Explanations given of the Hitt. (and Anatolian) verb system

The conclusions I draw are based on Kronasser 1956 and 1966, Kammenhuber 1963, Neu 1968², all with reference to and discussion of earlier literature on the subject.

5.2.1 Kronasser

Kronasser (1956:187 ff., 1966:369 ff.) interprets the *hi*-conjugation as a whole as a Hitt. innovation.

Of the pres. sing. *-hi, -ti, -i* he identifies the last ending with the *i* in Gr. φέρεῖ (pres. 3rd p. sing of the *ō*-conjugation) but he also mentions the possibility that PIE 3rd p. sing. perf. *-e* (Gr. οἶδε) is the origin. He sees *-hi* as a transformation by means of

the presential *i* (in *-mi*, *-si* etc.) of the Anatolian *-ha* in the pret. 1st p. sing. (of which Hitt. *-hun* constitutes another transformation: < *-ha* + the *-un* of the *mi*-conjugation). He leaves the question how this *-ha* is to be explained open, but indicates the possibility of a connection with Gr. perf. *-α* and of a foreign origin for both. According to Kronasser, the perf. 2nd p. sing. *-tha* may be the origin of *-ti*. And the same PIE ending may further have given the Hitt. *-ta* in the pret. 2nd p. sing. (in which case Kronasser seems, without saying as much, to want to explain *-ti* as a transformation of *-ta*).

Of the pret. endings *-š*, *-ta*, *-šta* in the 3rd p. sing. of the *hi*-conjugation he considers seeing PIE *-to* in *-ta*, and a contamination in *-šta* of *-š* (an aorist ending?) and *-ta*. "Mit einer Sekundären-dung der 3. sg. **-s* ist jedenfalls zu rechnen" he observes (1966: 378). But his general impression still seems to be that the occurrence of *-š*, *-ta*, *-šta* in the pret. 2nd and 3rd p. sing. of the *hi*-conjugation without any discernible difference, and also the etymology of these endings, are a problem unsolved.

In the medio-pass. Kronasser starts from the Anatolian core *-ha*, *-ta*, *-ta*, *-ušta*, *-duya/duma*, *-anta*. The 3rd p. sing. and 3rd p. pl. contain the PIE medial secondary endings *-to*, *-nto*.

-ta in the 2nd p. sing. derives from the 3rd p. sing. *-ušta* and *-duya/duma* is connected with the medial endings Gr. (Homeric) *-μεσθα* and Skt *-dhvam*, respectively.

r(i) in the endings originally belongs to the 3rd p. sing.; Hitt. *-tari* is analysed: *-ta* + *r* + *i*.

The 1st p. sing. *-ha(ri)* and the 3rd p. sing. *-a(ri)* are analogical formations to the active endings of the *hi*-conjugation.

5.2.2 Kammenhuber

Kammenhuber (1963: 29 ff.) derives the sing. sequence of the *hi*-conjugation, *-hi*, *-ti*, *-i* < Hitt. (or Proto-Anatolian?)¹ *-ha*, *-ta*, **-a* + presential *i* (found in *-mi*, *-ši*, etc.).

At the back of these *-ha*, *ta*, **-a* are the PIE perf. endings *-a*, *-tha*, *-e* (which through influence from the 1st and 2nd p. sing. has become *-a*). Regarding the use of the old perf. in the active

¹ 1963: 331 Kammenhuber derives *-hi* from "Heth. *-ha+i*", and *-ti*, *-i* < Hitt. *-ta*, **-a+i*, but he also says (in a footnote) that the variant *-he* for *-hi* mostly occurring in early graphic "ist das Ergebnis eines vorheth. kurzen *-i*-Diphthonges".

present, Kammenhuber makes a comparison to pret. presents like Gr. οἶδα.

The PIE perf. endings *-a* and *-tha* are, according to Kammenhuber, found also in the following pret. endings: Proto-Anatolian 1st p. sing. *-ha* (of which Hitt. *-hun* in the *hi*-conjugation is a contamination of *-ha* and the *-un* of the *mi*-conjugation), Hitt. 2nd p. sing. *-ta* in the *hi*-conjugation and 3rd p. pl. (both conjugations) *-ir*. In this connection should also be mentioned that Kammenhuber sees *-š* as the original ending in Hitt. pret. 3rd p. sing. of the *hi*-conjugation, while the 3rd p. sing. *-ta* derives from the 2nd p. sing. Finally, Kammenhuber finds the PIE perf. endings *-a*, *-tha*, *-e* → **-a* in medio-pass. 1st and 2nd p. sing. and the *t*-less 3rd p. sing. In the 3rd p. pl. and the 3rd p. sing. containing *t* he starts out from “*nt+r*” and “*t+r*”, where *r* is identical with the *r* found in perf. 3rd p. pl. (Lat. *-ere*, Skt *-ur*, etc.); the medial and passive *r*-endings originate in impersonal expressions ‘one . . .’ < ‘they . . .’.

Kammenhuber connects these Anatolian medio-pass. endings with Toch. *-tär*, *-ntär*, Phrygian *-τοο*, Lat. *-tur*, *-ntur*, Osco-Umbrian *-ter*, *-nter*, OIr. *-thar/-thir*, *-tar/-tir*. In the 1st and 2nd p. pl. Kammenhuber sees (in agreement with what is probably the generally accepted view) an original identity with the medial Gr. (Homeric) *-μεσθα*, Skt *-mahi* and Skt *-dhvam*, respectively.

Concerning the distribution of *r*-forms and *r*-less forms in the medio-passive, Kammenhuber is of the following opinion: From the 3rd p. pl. and the 3rd p. sing., with *t*, the *r* spread to other endings, in the course of which an alternation between *r*-forms: *r*-less forms emerged there. The same alternation was then analogically introduced into those forms that originally contained *r*. *i* in *-tari* etc., is an added distinguishing mark of the present tense, and by this addition the analysis of *-tari* etc., has become *-ta-ri*. In contrast to the present-distinguishing *-ri*, a preterite-distinguishing *-ti* (of unknown origin) has been added to the *r*-less medio-pass. form in Hitt. Since *i* was the distinguishing mark of the present, *-ti* lost its *i* in a later stage.

5.2.3 Neu

In 1968¹ Neu lists all known Hitt. medio-pass. verb forms and indicates (according to his analysis) their meaning and voice.

1968² is based on this thorough working up of the material.

In the beginning of the first section Neu gives an account of the collection of medio-pass. forms and of the historical development in Hitt. (or in Anatolian as a whole) that he finds in the series of endings.

After this follows a grouping of the material as to voice. In doing this he is able to show that "media tantum", which in reason belongs to the earliest period, above all has the uses "Zustandsmedium" (e.g. *a-* 'be warm', *zeja-* 'be boiled, boil') and "Vorgangsmedium" (e.g. *kiš-* 'become, happen'), but a passive sense occurs too. In medio-pass. competing with active of the same verb is found "Tätigkeitsmedium" (beside "Zustandsmedium" and "Vorgangsmedium"). To this medium Neu refers, in the first place, the frequent type "direkt-reflexiv", e.g. *arra-* 'wash oneself' (in the active 'wash'), but also transitive medio-pass. forms (partly, according to Neu, with a discernible "indirect-reflexive Diathese"), e.g. *auš-* 'see', *hattāi-* 'cut (off), hew (off)'.

Another section of 1968² has as its main task the explanation of the medio-pass. inflection. But Neu finds that this requires the active inflection, too to be etymologized.

Neu's discussion of the origin of the Hitt. (and Proto-Anatolian) verb system leads to his attributing to the unique endings of the Hitt. *hi*-conjugation (with correspondence, in certain points, in other Anatolian languages) and to Hitt. (Anatolian) medio-passive an important part in a PIE reconstruction.

After a certain amount of development (see below) there was, according to Neu, in PIE the following series of endings.

Present		
Active voice	Perfect I	Perfect II
sing. 1st p. <i>-mi</i>	<i>-ha</i>	<i>-ha-i</i>
2nd p. <i>-si</i>	<i>-tha</i>	<i>-tha-i</i>
3rd p. <i>-ti</i>	<i>-a</i>	<i>-a-i</i>
pl. 1st p. <i>-mes/mos</i>	<i>-mastha</i>	<i>-mastha-i</i>
2nd p. <i>-te</i>	<i>-dhya</i>	<i>-dhya-i</i>
3rd p. <i>-nti</i>	<i>-ar</i>	<i>-air</i>
Preterite		
Active voice	Perfect I	Perfect II
sing. 1st p. <i>-m</i>	<i>-ho</i>	<i>-m-o</i>
2nd p. <i>-s</i>	<i>-tho</i>	<i>-s-o</i>
3rd p. <i>-t</i>	<i>-o</i>	<i>-t-o</i>
pl. 1st p. <i>-m-</i>	<i>-mastho</i>	?
2nd p. <i>-te</i>	<i>-dhyo</i>	(<i>dhyo?</i>)
3rd p. <i>-nt</i>	<i>-or</i>	<i>-ntor</i>

Originally there was in PIE only the pair *-m*, *-s*, *-t*, etc.: *-ho*, *-tho*, *-o*, etc. with the contrast active (action): perfect (state) in voice and without any tense function.

Later the pair *-mi*, *-si*, *-ti*, etc.: *-ha*, *-tha*, *-a*, etc. was formed with the same contrast in voice but also with a tense function. In this connection the original pair was given a preterite function. Further a medium started to develop.

This last development was morphologically expressed in a combination of the characteristics of the active voice and the perfect tense. The first stage was the rise of the series *-hai*, *-thai*, *-ai*. etc. It was not purely an expression for medium (hence the name "perfect II"). This series is historically established partly as so-called primary medial endings (Skt 1st p., 3rd p. sing. *-e*), partly as perfect endings (Lat. sing. *-i*, *-is-ti*, *-it* 3rd p. pl. *-ēre* < **-ai*, **/-is/-tai*, **-ai/t/*, **-air/e/*), partly as present active endings. The latter is, according to Neu,¹ the case with the sing.-series of the Hitt. *hi*-conjugation, *-hi* (*-he*), *-ti*, *-i* (pres. 3rd p. sing. *-i* also found in Luw. and ? Pal.); 3rd p. pl. **-air*, on the other hand, he sees as the origin of Hitt. 3rd p. sing. pret. *-ir* (see below).

Not until this PIE *ai*-series on its part, through renewed influence from the active voice, was changed into the so-called primary *-mai*, *-sai*, *-tai*, *-ntai* found in Gr., was there a series of endings with a purely medial function.

In the series of endings which, according to Neu, constitutes the "present perfect I" the well known perfect-endings in the 1st p. sing. (*-a*), 2nd p. sing. (*-tha*), 3rd p. sing. (generally seen as *-e*, but even before Neu interpreted as originally *-a*²) and 3rd p. pl. (*-r* or *-?r*) are recognized. Neu has generalized *a* in this "perfect I". Concerning the 1st and 2nd p. pl., *-mastha* and *-dhya*, he has, in so doing, chiefly based his decision on the occurrence of the Skt primary medial endings *-mahe* and *-dve* which he derives from *-masta-i*, *-dhya-i* and the Hitt. medio-pass. endings *-ṣašta*, *-ṣaštari* (with *-m-* → *-ṣ-* through the influence of the *-ṣen(i)* of the active inflection) and *-duma*, *-dumari* (and Luw. *-duṣṣari*, *-duṣṣar*).

The relevance of these Hitt. (Anatolian) forms in this connection has to do with the fact that Neu (like Kammenhuber) sees his "present perfect I" behind the Anatolian medio-pass. This

¹ Cf. Rosenkrantz 1953: 344 f.

² See Neu 1968²: 128.

derivation of the Hitt. (Anatolian) medio-pass agrees with Neu's view that the PIE medium voice (the origin of the passive) has developed from the perfect (though most often with combinations of active and perfect endings as a morphological expression of the fact that we have to do with a "medium" between the voices perfect and "active"). Neu also finds support for his view in the fact that "Zustandsmedium" may without difficulty, and perhaps should under all circumstances, be seen as the earliest use of the Hitt. medio-pass. forms.

The occurrence of forms containing *r* in the Anatolian medio-pass. inflection and the alternation between *ri*-forms and *ri*-less forms in Hitt. are explained by Neu in the following way:

(1) The basis is an original series *-ḫa*, *-ta*, *-a*, *-uasta*, *-duya*, *-nt-ar*, which directly originates in Neu's "present perfect I", except for the 3rd p. pl. which contains the active ending *-nt + -ar* (the latter from the "present perfect I"). From this series the Proto-Anatolian series *-ḫar*, *-tar*, *-ar*, *uastar*, *-duyar*, *-ntar* arose from the 3rd p. pl. This stage with the *r* throughout is mirrored by the Luw. endings, all with *r* (without *i*) and by the Pal. *-tar*.

(2) When a final *-r* in endings tended to drop out in Hitt. (as in the suffixes *-eššar* *-(a)tar*) it was partially protected from this by an additional *-i* (from *-mi*, *-si*, etc.) which gave the consistent contrast *ri*-form: *ri*-less form (and the interpretation of *-ri* as a suffix) in this language.

To the forms with a dropped-out *r* an element *-ti* (=the reflexive particle which in other uses has become *-z*) has been added and has become a characteristic of the medio-pass. preterite. Because of the fact that *-i* was understood as a distinguishing mark of the present the *i* in *-ti* was lost in later Hitt. to a large extent.

Neu sees the series *-ho*, *-tho* etc. ("preterite perfect I") directly in two of the preterite endings of the *ḫi*-conjugation: the common Anatolian *-ḫa* that is the origin of the Hitt. 1st p. sing. *-ḫun* and 2nd p. sing. *-ta*. The 3rd p. sing. *-ta* originates in *-to* from the series of secondary medium endings (Neu's "preterite perfect II"). — In the pl. 1st p. and 2nd p. we meet *-uen*, *-ten* of the *mi*-conjugation instead of the expected developments of PIE *-mastho*, *-dhuo*. — In the 3rd p. pl. *-ir* (*-er*), which is likewise common to both conjugations, we have to do with the pres. ending of the *ḫi*-con-

jugation (PIE *-air*) which changed its tense and substituted an original *-ar* tending to lose its *r*.

The *ho*-series is, according to Neu, moreover confirmed by the following points: *-ho*, in the 1st p. sing. *-ō* of *-ō*-conjugation which is derived from the thematic vowel *o* + *ho*, *-tho* in the OIr. 2nd p. sing. dep. *-ther* and Toch. medio-pass. *-tar*, *-tār* (< *-tho* + *r*), *-dhūo* in the Skt medial pret. 2nd p. pl. *-dhuam* (< *dhūo*-*m*) and in *-or*. The latter ending is by Neu assumed to be the basis of all non-Anatolian medial or passive or deponent *r*-endings (1968²: 161 ff.). I will here only mention that Neu sees *-or*: (a) in the OIr. 3rd p. sing. pass. *-ar*, also (and by this the ending is assumed to reveal its origin) used in impersonal or indefinite expressions, "one . . .", to intransitive verbs and with an infixed appropriate pronoun used of the 1st and 2nd person (the pass. 3rd p. pl. *-tar* is, according to Neu, a transformation, with the addition of the active ending *-nt*, which was made when the original ending was given the character of 3rd p. sing.), (b) in Umbrian *-o* < *-or* in *be-nuso* "ventum erit", *couortuso* "revorsum erit".

Before proceeding to the comments it is suitable to repeat Neu's derivation of the Hitt. (or Anatolian) verb endings of which (above all) there are divergent opinions.

(1) The pres. sing.-series of the *hi*-conjugation, *-hi*, *-ti*, *-i* (this last ending also in Luw. and ? Pal.) originates in PIE *-hai*, *-thai*, *-ai*; *-hai* and *-ai* are known as so-called primary medium-endings (in Skt).

A 3rd p. pl. belonging to the same series, *-air*, has secondarily been used as a preterite in Hitt. (see (2) below).

The known pres. pl. forms of the *hi*-conjugation are common with and belong to the *mi*-conjugation.

(2) The preterite endings in the 1st and 2nd p. sing. of the *hi*-conjugation, *-hun* (< Anatolian *-ha* + the *un* of the *mi*-conjugation) and *-ta*, originate in PIE *-ho*, which also may be found in the Skt secondary medial ending *-a*, and *-tho* which is found (with *-r* added) also in OIr. dep. *-ther* and Toch. *-tār*, *-tar*.

The 3rd p. sing. *-ta* of the *hi*-conjugation, like Luw. *-ta*, contains PIE *-to*, known as a secondary medial ending (and as an active preterite ending).

While the 1st and 2nd p. pl. *-yen*, *-ten*, common to both conjugations, originate in the *mi*-conjugation, the 3rd p. pl. *-ir* belongs to the *hi*-conjugation, though to its pres. inflection. When

the original ending in the 3rd p. pl. pret. *-ar*, < PIE **-or* in Neu's *ho*-series, tended to lose its *-r*, *-ir* changed its tense.

The Luw. pret. 3rd p. pl. *-anta* contains the secondary medial ending *-onto*.

Neu's thorough investigation of the Hitt. medio-pass. of course gives an invaluable contribution towards the derivation of the Anatolian verb inflection.

But when he uses his knowledge of Hitt. and Anatolian medio-pass. to give to this category, as to the unique endings of the Hitt. *hi*-conjugation, important (archaic) parts in the PIE and pre-PIE reconstructions that he ventures upon, this awakens scepticism:

(1) Only Anatolian shows medial (and passive) use of the IE endings that are usually presented as perfect (*-a*, *-th(a)*, *-e* (< *-a?*), 3rd p. pl. *-(?)r*).

(2) Of the PIE endings that Neu assumes to be the basis for what may be referred to as the Anatolian *ha*-preterite, the 1st p. sing. *-ho* → *-ha*, 2nd p. sing. *-tho* → *-ta*, 3rd p. sing. *-to* → *-ta*, 3rd p. pl. *-nt-or* → *-antar*, the 1st p. sing. and 3rd p. pl. are known only as medial (and passive). For Neu's derivation of medial *o*-endings from original perf. endings Anatolian probably plays the most important part, inter alia by the fact that the pret. *-ha* < *-ho* is connected with the assumption: "*-ō* in the *ō*-conjugation < *-ohō*".

(3) Only Hitt. (Anatolian) knows the *ai*-series (in its, according to Neu, original form) as active pres. endings.

In so far as archaistic exclusiveness is here ascribed to Hitt. (or Anatolian) it should be remembered that Hitt. (and Anatolian) as to its general character is now generally thought to represent a "Spätform" among the IE dialects (see 2.1).

Nor do Neu's PIE constructions possess such conclusive power in themselves as to justify the exclusiveness ascribed to Anatolian.

Further Poultney (1969) has presented a noteworthy possibility of deriving the medial *ai*-endings from PIE *oi*, i.e. from the so-called secondary medial endings *-o + i*.

And even if the derivation of the *ai*-endings from the perf. endings and Neu's consistent parallel *a*- and *o*-series are accepted,

there is still a long step to Neu's assumption: the PIE medial voice < perf.

One of many alternative explanations of the inevitable contacts between perf. and medium possible is the following: PIE had originally a series of endings indicating state (with perfective as well as medial nuances in its use), which differed from the active at least in the 1st—3rd p. sing. and the 3rd p. pl., and which contained both endings with *a* and with *o*. A differentiation of the endings (which gave at least partly consistent *a*- and *o*-series) connected with a splitting up of the state-voice into perfect: medium, has then taken place. And the *ai*-series may go back to the time when the *a*-endings had a generally state-denoting use.

Against the background of the above comment to Neu's reasoning it must be methodically the most correct thing to choose the shortest way in searching for counterparts to the Anatolian series of endings (cf. the discussion under 3).

5.3 My own position

5.3.1 The endings of the active voice

Proto-Anatolian has in the pres. active voice had the well-known so-called primary endings *-mi*, *-si*, *-ti*, *-nti*. The 1st and 2nd p. pl., Hitt. *-ḡeni*, Pal. *-ḡani*, and Hitt. *-teni*, seem to be Anatolian formations (with pres. *-i*) to the corresponding pret. endings, Hitt. *-ḡen*, *-ten*. As far as this there seems to be practically unanimity between the different views.

In discussing the remainder of the active inflection, the pret. endings and the special endings of the *hi*-conjugation (in comparison to the imperative), it seems suitable to start out from the endings of the preterite.

In the sing. we find, to begin with, unmistakably, the so-called secondary endings *-m* (in *-/u/n*), *-s*, *-t*. The whole sing.-series is found in the Hitt. *mi*-conjugation, the 3rd p. sing. *-t* also in Pal. and possibly (judged as extremely uncertain) the 2nd p. sing. *-š* also in Luw.

The 1st and 2nd p. pl. *-ḡen*, *-ten* common to both conjugations in Hitt. should reflect PIE *-men*, *-te*, known as "secondary endings" but also found in the perf.

The facts mentioned above, combined with the facts that Pal. knows the pres. endings *-yani*, Pal. and Luw. the imp. 2nd p. pl. *-tan*, and Hitt., Luw., Pal., Lycian an imp. 3rd p. pl. *-ntu*, shows that Proto-Anatolian possessed a complete series of secondary active endings. It is, however, not certain, perhaps improbable, that these endings in Proto-Anatolian constituted a fully developed preterite.

As a sign that the pret. was not more definitely developed until the Anatolian dialects may be taken the circumstance that these dialects at least in one case unmistakably have developed in different directions. I am referring to the 3rd p. pl., where Hitt. seems to have no counterpart to the ending in Pal., Luw., Lycian.

This has taken us to the Anatolian active pret. endings whose origin is more or less disputed: the special endings of the Hitt. *hi*-conjugation, the 1st p. sing. *-hun*, 2nd, 3rd p. sing. *-š*, *-ta*, *-šta* and the Hitt. 3rd p. pl. *-ir* (both conjugations); the Pal., Luw. 1st p. sing. *-ha* (Lycian *-Xa*, *-ga*), Luw. 2nd p. sing. *?-ta*, *-š*, Luw., 3rd p. sing. *-ta*, Lycian *-te/-de*, Pal. 3rd p. pl. *-inta*, Luw. *-anta*, Lycian *-nte*.

The Anatolian 1st p. sing. *-ha*, from which, according to the general opinion, Hitt. *-hun* has arisen through contamination between *-ha* and Hitt. *-un* (in the *mi*-conjugation), is most natural to connect with the well-known PIE perf. ending *-a* (Gr. οἶδα). In the Hitt. 2nd p. sing. *-ta*, which may have a counterpart in Luw., it is, further, possible to recognize the perf. ending *-tha* (Gr. οἶσθα). With this interpretation of the 1st p. sing. *-ha/-hun* and the 2nd p. sing. *-ta* a reflection of the known perf. ending *-e* (Gr. οἶδε) or of a possibly existing secondary form or pre-form of *-e*, *-a*, would at least be expected in the Hitt. 3rd p. sing. of the *hi*-conjugation. I will also, in the first place, assume that the perf. ending *-e* has existed in Proto-Anatolian, but that on account of its vowel colour, contrary to *-ha*, *-ta*, it has developed into a pres. ending (see shortly below).

In the 3rd p. sing. of the *hi*-conjugation is instead seen a triple *-š*, *-ta*, *-šta* which the Hittitologists have not been able to stratify historically with the help of internal criteria. And the 2nd p. sing. of the *hi*-conjugation has the same appearance.

Since an influence 3rd p. sing. → 2nd p. sing. is considerably more probable than vice versa, it may reasonably be supposed that *-š* originally only existed in the 3rd p. sing. (an aorist end-

ing?). Further, *-šta* looks like a combination of *-š* and *-ta*, but the ending may have a longer history than that, cf. the Venetian 3rd p. sing. *zonasto* 'gave'. In any case there seems to be reason to assume that *-šta*, too, originally belongs to the 3rd p. sing. It seems that the Hitt. 3rd p. sing. *-ta*, again, should be connected to Luw. *-ta* and Lycian *-te/de*. Here PIE *-to* may be seen, known as a secondary medial ending but also found as an active ending. The 2nd p. sing. *-ta* I would prefer to interpret, in the first place, as=the perf. ending *-tha* (see above), but it may also be interpreted as the Hitt. 3rd p. sing. *-ta*.

In the Hitt. 3rd p. pl. *-ir* it is natural to see a reflex of the PIE perf. ending *-r/-?r*.

Pal., Luw. *-(a-, -i)nta*, Lycian *-nte* may contain PIE *-onto*, actually a secondary medial ending (Gr. *-οντο*).

Now over to the special endings of the *hi*-conjugation in the pres., 1st p. sing. *-hi*, 2nd p. *-ti*, 3rd p. *-i* (with corresponding endings also in Luw. and ? Pal.).

The lack of an ending corresponding to Hitt. *-hi* and *-ti* in other Anatolian languages speaks to some extent in favour of the 1st and 2nd p. sing. of the Hitt. *hi*-conjugation (and this conjugation as a whole) being a Hitt. innovation. In that case *-hi* is probably formed from the Anatolian *-ha*, which has been transformed in another way in the pret. *-hun*, and *-ti* analogically formed from the 2nd p. sing. *-ta*, i.e. *-hi*, *-ti* < *-ha*, *-ta*+the pres. *i* in *-mi*, *-si* etc.¹.

The fact that *-i* together with *-hi* and *-ti* forms the series of endings that constitutes the *hi*-conjugation in the present tense, in itself speaks in favour of a common origin for all three endings. But the suggested heterogeneous origin might be allowed to pass. After all, in a fairly recent past *-i* and the endings behind *-hi* and *-ti* expressed the same voice.

Behind the 3rd p. sing., *-i* that probable existed already in Proto-Anatolian (or common Anatolian) I prefer to see the ending *-e* (Gr. *οἶδε*) found in the perf. 3rd p. sing. While *-e* → *-i* in Hitt. may be confirmed through parallels,² this is probably not possible concerning Luw. or Pal.

¹ Observe that *-ti* interpreted in this way confirms the assumption that *-ta* belongs to the 2nd p. sing.

² Observe inter alia that the thematic vowel *e* seems to have become *i* in the alternative 2nd p. sing. imp: *-i* (see Kammenhuber 1963: 323, 324).

But a preterite-present *-e* in Proto-Anatolian (common Anatolian) may have become *-i* on account of its comparatively great similarity in sound to *i* in *-mi*, *-si*, etc.

Rosenkrantz (1953) — and, following him, among others Kammenhuber (1963:330) — has given the non-appearance of assimilation of the *-t* of the stem in a 3rd p. sing. like *šippanti* as a support of his assumption that *-i* originates in *-ai*. A preserved dental before the 3rd p. sing. *-i* probably constitutes a considerable objection against seeing it as a PIE *-i* (as Kronasser suggests by way of alternative) or as *-i* < *-e* already in Proto-Anatolian (common Anatolian). The dental before *-i* might have been preserved (or reconstructed) through the pressure of the system, but this would partly be an assumption ad hoc. As an alternative I suggest explaining the 3rd p. sing. *-i* < *-e+i* → **ei*; to the early perf. ending (passing into pres. use?) was added the distinguishing mark of the present tense. It may be pointed out that a dat./loc. sing. like *humanti* (the stem *humant-* 'all' + the ending **-ei*; see Kammenhuber 1963:301) has retained *t* and we may assume a relationship to the retained dental before *i* (sometimes in earlier Hitt. also *e*) < PIE *oi* or *ai*.

According to Neu 1968²:125 f. and Kammenhuber 1963:331 (note 1) it is difficult to explain Early Hitt. instances of *-he* for *-hi* by the mutual instability between *i* and *e* often shown in Hitt. in writing (and pronunciation?).

Against the background of all said above about the sing. series *-hi*, *-ti*, *-i* it should probably in the first place be derived from diphthong-forms < *-ha+i*, *-ta+i*, *-e+i*. But if so, why not trace back *-hi*, *-ti*, *-i* to a PIE *ai*-series or *oi*-series, as Rosencrantz and Neu do? The chief arguments against it are:

(1) With regard to the general character of Hitt. and Anatolian we have no right to assume that the probability should be especially great that Hitt. or Anatolian should provide "missing links", confirming more or less possible or probable constructions of the PIE system of endings; in this case, according to Neu, we should have to do with the use of *ai*-endings in the process of becoming medial.

(2) The combination of Hitt. *-hi*, *-ti*, *-i* and *-hun*, *-ta* (and *-ir*) in one and the same conjugation speaks in favour of a close relationship between them. From the point of view of different

PIE series of endings this agreement becomes a considerable problem. On the other hand the connection becomes easy to understand if *-hi*, *-ti*, *-i* as well as *-hun*, *-ta* (and *-ir*) are (ultimately) derived from the PIE perf. endings.

And the derivation of the 3rd p. sing. *-i* < Anatolian **-e+i* is preferable to < *-a+i* for the following reasons: (a) a PIE perf. 3rd p. sing. *-a* has not been confirmed, (b) the absence of a double development of the 3rd p. sing. into pres. and perf. endings may be explained by the fact that the endings in question, that is to say *-e* and **-ei- → -i*, became too much alike.¹

The derivation of the Anatolian active endings discussed, that I have arrived at after having studied the literature on the subject, corresponds most closely with the one given by Kronasser (see 2.1). See also Kammenhuber (2.2).

5.3.2 Anatolian medio-pass.

If Neu's investigation of the Hitt. medio-pass. is taken as a starting-point and his view that the 3rd p. sing. *-ta(ri)* is secondary to *-a(ri)* etc. is accepted, but if, in contrast to Neu, IE endings that are already known with medial (and passive) use are sought for I want to proceed from the following PIE series of endings.

- sing. 1st p. *-o*: cf. Skt secondary med. *-a* in the opt.
 2nd p. *-tho*: cf. OIr. dep. *-ther*, Toch. medio-pass. *-tar*, *-tār*
 3rd p. *-o*: cf. a few cases of Skt secondary med. *-a*, inter alia *āduha*
- pl. 1st p. *-mestho*: cf. Skt primary med. *-mahe*, secondary med. *-mahi*, Gr. (Homeric) *-μεσθα*
 2nd p. *-dhyo*: cf. Skt secondary med. *-dhvam*
 3rd p. *-(o)ntor*: cf. Lat. pass. and dep. *-ntur*

However, it should immediately be pointed out that the consistent *o* of the series is far from inevitable. The Hitt. 2nd p. sing. *-ta(ri)* is possibly (like OIr. *-ther* and Toch. *-tar*, *-tār*) to be combined with the Skt 2nd p. sing. med. *-thaḥ*, OIr. dep. *-the*, and may have got its form through influence from the 1st and 3rd p. sing. The 1st p. pl. *-ḡašta(ri)* may, further, originate in *-mestā* and in the 2nd p. pl. the *o*-vowel is not confirmed either.

¹ A more convincing explanation of the fact that *-ha*: *-hi*, *-ta*: *-ti* has no counterpart in the 3rd p. sing. is perhaps found in the, from the phonetic point of view more hazardous, alternative: 3rd p. sing. *-i* directly < *-e*.

Finally the Proto-Anatolian *-antar*, which (according to Neu) seems to be found in the 3rd p. pl. (see shortly below), may be derived from *-(o)nt_r*; cf. the OIr. dep. *-tar*, the Osco-Umbrian pass. *-nter*, the Toch. medio-pass., *-ntār*, which may all reflect a primary *-(o)nt_r*, not (as is thought in Neu 1968²: 164, 176, 185) a *-(o)ntro*.

With regard to the fact that all medial and passive endings with *r* in IE languages, according to Neu and others, probably ultimately originate in a 3rd p. pl., at least the 3rd p. pl. medio-pass. in Anatolian must have had an ending with *r* from the beginning. As regards the alternation between forms with and without *r* in Hitt. perhaps the explanation given by Neu is correct as a whole. However, an *r*-less form of some ending or endings outside the 3rd p. pl. may be original too. The comparatively small amount of Luw. material, and the simple *r*-form found in Pal., do not forbid this assumption.

Kammenhuber's and Neu's derivation of Anatolian medio-pass. endings from PIE perf. endings is untenable. It is a case of going far in search of what is close at hand. The Anatolian medio-pass. shows close relationship in respect of voice to what is usually called "medium" or "passive", respectively. In the first place genetic relationship between Anatolian and non-Anatolian endings that have this resemblance as to voice should therefore be sought for.

Besides the PIE perf. endings are needed to derive the special endings of the *hi*-conjugation (see 3.1).

To derive the Anatolian preterite endings in question from PIE endings otherwise almost exclusively known as medial or passive, as Neu does, and the Anatolian medio-pass., again, from PIE perf. endings, is really to turn things upside down.

To derive the special active endings of the *hi*-conjugation, with Kammenhuber, as well as the medio-pass. from PIE perf. endings is an unwarranted over-exploitation of the latter.

5.3.3 Where is direct correspondence found between Anatolian *h* and other IE dialects *Ø* in verb endings?

The derivation of Anatolian pret. *-ha* < PIE perf. *-a* may be considered to be probable ("convincing" is perhaps an expression that is too strong).

Hitt. *-hun* is practically inevitably, and *-hi* at least probably a Hitt. (in the case of the latter even Proto-Anatolian) transformation of this Anatolian *-ha*.

I would prefer to connect the Hitt. medio-pass. *-ha(ri)* etc. to the PIE medial ending *-o* which is found in Skt. If this is correct, the situation may in a way be said to be the same as in the case of the pret. *-ha* : PIE *-a*.

Observe, however, that the medio-pass. *-ha(ri)* etc. is only attested in Hitt. The possibility that an original 1st p. sing. **-a(ri)* has become *-ha(ri)* through influence from the active ending is quite great. The desire to make a difference between the 1st p. sing. and the 3rd p. sing. may have born a part in this.

In the Hitt. medio pass. 2nd p. sing *-hut(i)*, in a few cases (archaically?) also *-hu*, it is perhaps most plausible to see an extension of *h* from the 1st p. sing. (as in Kammenhuber).

Some term explanations, abbreviations and symbols

A (or H^2 or ∂^2 , or H^2 and H^4 or ∂^2 and ∂^4)=*a*-colouring (or *a*-preserving) *H*.
E (or H^1 or ∂^1)=concerning vowel colour neutral *H* (or *e*-preserving or *e*-colouring *H*).

O (or H^3 or ∂^3)=*o*-colouring *H*.

H = "Laryngeal" of every kind or of indefinite kind or not specified kind.
"Laryngeal" = PIE (or "Indo-Hittite"; see 1.3.1.5) *C* or *R*, launched by the laryngeal theory (see chiefly 1.2 and 1.3.1.14).

Laryngealistic = Corresponding to or according to the laryngeal theory or the view of laryngealists; written by or applied by laryngealists, etc.

Traditional = Not according to the laryngeal theory; who is not an adherent of the laryngeal theory (i.e. = Brugmann, etc.). — Traditional writings are, in this work, generally used without comments by presenting the material, etc.

Traditionalist = A linguist who is traditional (in the sense given above).

Laryngealist = A linguist who accepts (and has published works on) the laryngeal theory.

o^1 = Apophonic *o*.

o^2 = PIE *o* which does not seem to be apophonic *o* (so-called fundamental *o*).

V = PIE *e* or *a* or *o*.

\bar{V} = PIE so-called fundamental \bar{e} or \bar{a} or \bar{o} .

C = Pure consonant.

R = "Resonant", i.e. \dot{i} , \dot{u} , *r*, *l*, *m*, *n* or assumed equivalent sounds.

v = "Schwa secundum" (as a pronemic or merely phonetic entity).

* Before a word-form etc. symbolizes, according to the custom, that the word-form etc. is constructed. But in this book the symbol is used only when the context does not give the same information.

Acc. = Accadian

Arm. = Armenian

Avest. = Avestan

Gmc. = Germanic (Proto-Germanic)

Goth. = Gothic

Gr. = Greek

Hitt. = Hittite

IE = Indo-European

Lat. = Latin

Lith. = Lithuanian

Luw. = Luwian

Myc. = Mycenaean

OC = Old Cornish

OCS = Old Church Slavic

OE = Old English

OFris. = Old Frisian

OHG = Old High German

OIr. = Old Irish

ON = Old Norse

OPru. = Old Prussian

OS = Old Saxon

Pal. = Palaic

PIE = Proto-Indo-European

Sem. = Semitic

Skt = Sanskrit

Toch. = Tocharian

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KDVS=Det Kongelige Danske Videnskabernes Selskab. Historisk-Filologiske Meddelelser.
KZ=Zeitschrift für vergleichende Sprachforschung.
Lg.=Language. Journal of the Linguistic Society of America.
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